

Draft
Dutchess County
Local Solid Waste Management Plan



Dedicated to Preserving our Environment

Marcus J. Molinaro, County Executive
A. Gregg Pulver, Chairman of the Legislature

Lindsay Carille, Deputy Commissioner Division of Solid Waste Management

2022

Acknowledgements

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Dutchess County

Marcus J. Molinaro, County Executive

William F.X. O'Neil, Deputy County Executive / Chief of Staff

A. Gregg Pulver, Chairman of the Legislature

Joseph D. Cavaccini, Chair, Environment Committee

Lindsay Carille, Deputy Commissioner, Division of Solid Waste Management

Kerry Russell, Recycling Educator

Daniel Collins, Compliance Inspector

Eoin Wrafter, Commissioner, Department of Planning and Development

Jennifer Coccozza, Deputy Commissioner

Cover photo:

Wetland pond visible from the WRS Dutchess Rail Trail

Adopted by Dutchess County []

Approved by New York State Department of Environmental Conservation []

Dutchess County Local Solid Waste Management Plan

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Solid Waste Terms

Ag Bag (Agricultural Bag): Woven plastic bags used for silage storage and composting.

Ash: The residuals generated from the combustion of MSW. In accordance with federal law, waste-to-energy ash is tested to ensure it is non-hazardous.

Biosolid: Dewatered sewage sludge.

C & D (Construction and Demolition Debris): Materials resulting from building, demolition or refurbishment of structures, roads or utilities. Examples include wall coverings, asphalt pavement and piping.

Commingled: A mixture of several recyclable materials (glass, plastics and metal containers) in one bin. In a dual-stream recycling system, commingled material is sorted separately from paper material.

Composting: A controlled decomposition process which turns organic residuals such as food scraps, biosolids and yard waste into a beneficial soil amendment.

Diversion: Reusing or recycling materials rather than disposing of them.

Dual-stream: A recycling system which processes commingled and paper materials separately.

E-waste (Electronic Waste): Waste that has electronic components, such as computers and televisions.

Flow Control: A legal provision allowing local government to designate facilities where municipal solid waste (MSW) is taken for processing, treatment, recycling, composting, or disposal.

HHW (Household Hazardous Waste): Waste that is hazardous, such as pesticides and cleaning materials.

Landfill: A facility where garbage is buried in the ground with engineered environmental protection measures in place for air and water quality integrity.

LSWMP: Local Solid Waste Management Plan.

NYS DEC: New York State Department of Environmental Conservation.

MRF (Material Recovery Facility): A specialized plant that receives, separates and bales recyclable materials as marketable commodities to end-user manufacturers.

MSW (Municipal Solid Waste): The combined residential, institutional and commercial solid waste generated in an area. The term MSW for this Plan is referring to solid waste generated within Dutchess County.

NSF (Net Service Fee): The cost difference between revenue and expenses generated by the Resource Recovery Agency operations. Dutchess County is obligated to pay this fee when expenses are greater than revenues per the 1984 Solid Waste Disposal Service Agreement.

Organic Waste: Readily degradable organic material that has been separated from the non-compostable material at the point of generation including food waste, soiled or unrecyclable paper, and yard waste.

PAYT/SMART (Pay-As-You-Throw and Save-Money-And-Reduce-Trash): In these systems, generators pay only for the amount of garbage they create. As a result, waste minimization through reuse, recycling and composting increases.

Product Stewardship: Extended producer responsibility. The role and responsibility of the manufacturer (also known as the producer or brand owner) of a product or package to cover the entire life cycle, including ultimate disposition of that product or package at the end of its useful life.

Recyclable: The ability to use recovered materials, such as plastics, metals or glass, in the manufacturing of a product.

Reuse: Products and packaging that can be used over again several times for its original purpose.

RRA or Agency: Dutchess County Resource Recovery Agency.

RRF (Resource Recovery Facility): The waste-to-energy facility overseen by the Resource Recovery Agency.

Service Fee: The set fee paid to the operator of the waste-to-energy facility for each ton of municipal solid waste processed per the 1989 Service Agreement.

Single-stream: A recycling system which processes commingled and paper materials together.

Solid Waste: Any discarded materials. Solid wastes can be solid, liquid, semi-solid or containerized gaseous material. This includes durable goods, non-durable goods, containers and packaging, food wastes and yard trimmings, and miscellaneous inorganic wastes generated.

Source Separation: Separating recyclable materials from solid waste at the source. A source can be a residence, institution or place of business.

Spot Market Waste: Waste that is received for waste-to-energy processing after contractual obligations for 140,000 tons of material delivered to the facility are met.

Supplemental Waste: Waste that is received for waste-to-energy processing which is brought to the facility by the operator of the RRF. This waste is from outside the County and does not count toward the 140,000 ton minimum contractual obligation. The Operator can only bring in supplemental waste by agreement with the RRA under a short-term contract.

T/P/Y: Tons per year.

Tipping Fee: The cost to haulers to unload material at the RRF and MRF.

Transfer Station: Facilities accepting solid waste for the purpose of subsequent transfer to another solid waste management facility for further processing, treating or disposal.

WTE (Waste-to-Energy): A facility that destroys MSW through combustion. The steam generated from this process in Dutchess County is used to operate a turbine generator. The facility generates enough electricity to power approximately 10,000 homes per year, which is equivalent to saving about 160,000 barrels of oil per year. The facility recovers ferrous (steel) metal and recycles approximately 6,000 tons of metal per year.

Executive Summary

Many positive changes have taken place since the last Local Solid Waste Management Plan (LSWMP) was adopted in 2012. We addressed the goals and tasks outlined in the Plan and have significantly increased our recycling rate. The Division of Solid Waste Management, responsible with implementing the County's Plan, is dedicated to promoting recycling and educating all residents on the benefits and how-to's of recycling within Dutchess County and enforcing the County's Solid Waste Management Regulations. With a full-time Recycling Educator, education is done in-person, through webinars, zoom meetings, flyers and social media. Our website is regularly updated and a monthly post on recycling topics is readily available to anyone using a computer. The Division also has full-time Compliance Inspector who enforces the County's recycling law and solid waste hauler licensing requirement. The County has made great progress addressing all the goals outlined in the 2012 Dutchess County Local Solid Waste Management Plan (Plan).

There are some tasks that continue to be important goals in this Plan, some of which will be briefly addressed here and in more detail throughout the Plan. These goals include increased organic composting opportunities and the future of MSW management within our County.

While there is organic composting going on in the County, increasing every year, most is done voluntarily by commercial entities. There is very little opportunity for residents to participate. There is still only one composting operation within the County that accepts food waste from both commercial and residential entities. The location of this operation is not convenient to a large sector of our County, so much of the locally generated composting materials go to other counties. For most residents, the only opportunity to compost is through backyard composting, which is promoted through the sale of at-cost backyard compost bins.

With the recent New York State Law requiring businesses/entities that generate a large quantity of food waste to donate and/or compost the materials, the County would welcome an entity building an additional compost facility and would contribute to a study regarding the feasibility and options.

A more immediate concern is the increasing amount of post-recycled Municipal Solid Waste (MSW) being generated. As a Local Solid Waste Management Plan is a plan for the future of solid waste management, Dutchess County must look to how MSW will be handled over the next ten and twenty years. MSW generation must be looked at in realistic terms and those planning for the future must acknowledge that for the past few years' generation is increasing rather than decreasing.

Dutchess County had the foresight in the 1980s to build a waste-to-energy facility (Facility). Although the Facility was never meant to handle all the County's post-recycled waste, as there were still local landfills at the time of its creation, it has served the County well as an environmentally sound and local disposal site. Subsequently all active landfills in Dutchess County were closed. The past few years have shown that MSW generation is increasing, both recycled and post-recycled waste. As the Facility can only process limited amounts of MSW, per the DEC Permit and facility size, this has caused our local haulers difficulties, as

they must often find other disposal sites. Although some local options exist, such as the Westchester waste-to-energy facility and transfer stations in and out of the county, the only other option for these haulers is long distance transport to out-of-county and out-of-state landfills. The transport to these landfills, 240 miles away and more, is costly to the hauler and their customers. In addition, due to transportation emissions as well as landfill methane emissions, this is not an environmentally sound or cost-effective option for Dutchess County waste disposal.

Since we can't handle all the County's MSW now, it is of serious concern as to what will happen in the future. The Facility, over 33 years in operation, requires expensive maintenance and each year total capacity diminishes due to age. A solution for MSW waste disposal is needed. Only two options currently exist, landfilling and waste-to-energy.

Option 1, landfilling: There are no operating landfills in Dutchess County or any surrounding county. The closest landfill for MSW disposal is approximately 240 miles away. No new landfills have been opened in NYS since 2006. Existing landfills are reaching capacity. Environmental concerns, due to potent greenhouse gas methane emissions, make landfilling a risky and undesirable option to plan on. Further, it is difficult to site a new landfill as neighbors to the proposed site resist placement near their homes.

Option 2, waste-to-energy: Waste-to-energy technology has served the County well. There are strict air quality regulations that the facility adheres to, it reduces waste while producing electricity and recovers and recycles over 6,000 tons of ferrous metals every year. It is the preferred method of MSW disposal versus landfilling, by both DEC and the U.S. Environmental Protection Agency. New technologies are improving plant capacities and emissions controls. This option would require a new facility sized to handle the projected Dutchess County waste stream. It would require years of planning and investment of millions of dollars, as it did in the early 1980s when Dutchess County decided landfilling was not the best option.

Option 2 would seem to be the best choice for the future of MSW disposal. Though current DEC leadership and New York State energy policy have limited the options for future MSW disposal, however, to just one, landfilling. Current policy has eliminated the feasibility for municipalities to fund upgrades for waste-to-energy.

The Climate Leadership and Community Protection Act has put the future of waste-to-energy in jeopardy. There are mandates that threaten to phase out waste-to-energy facilities by 2030. Unfortunately, New York State solid waste management, led by the DEC, has created the inevitable future of using landfills and eliminating waste-to-energy facilities. Landfills are the third-largest source of human-related methane emissions and the largest generator of emissions in the waste sector.

This leaves Dutchess County, and just about every municipality in the state, with no viable plan for future solid waste management. With few or no new landfills being built in New York State, limited capacity at existing landfills, and waste-to-energy not an option, how should municipalities plan for solid waste management? DEC, as the planning unit for NYS solid waste management, and those in State leadership, must take a role in local management of MSW and future disposal options. It must be acknowledged that waste is not going away, in

fact local and U.S. EPA statistics show it is increasing. Leadership and guidance on how MSW will realistically be managed is vital.

We are hopeful that waste-to-energy is recognized for its value and becomes the preferred option for future waste management. If so, plans to make such facilities a more economically feasible option should be included in any discussions. Waste-to-energy facilities are an expensive endeavor, to build and to run. Ash residue, a by-product of incineration, significantly drives up the costs of operation. The residue, which is currently used beneficially as an alternative daily cover (ADC) for landfills, costs even small facilities like the one in Dutchess County millions of dollars to transport. Other states and countries reusing ash have expanded beneficial uses, such as in road bed material. Allowing such a use for the existing 10 waste-to-energy facilities in New York State, as well as for new facilities, would make economic and ecological sense.

In summary, we have succeeded in managing MSW in an environmentally sound manner, the main goal of every LSWMP. It is the future management of MSW we must plan for now. To do that, we need timely guidance and leadership from both New York State and DEC on the viable options for solid waste management planning units.

Chapter 1: Dutchess County Planning Unit Description



Walkway Over the Hudson – view to City of Poughkeepsie

The Planning Unit

Dutchess County Government is the planning unit for Dutchess County and is responsible for developing the Local Solid Waste Management Plan (LSWMP). The County has a land area of approximately 801.6 square miles. We are located in the center of the Mid-Hudson Valley, halfway between New York City and Albany. Dutchess is one of seven counties that make up the Hudson Valley Region and is part of the New York State Department of Environmental Conservation (DEC) Region 3. The County borders over 45 miles of the Hudson River on its western boundary and borders the state of Connecticut to the east.

When looking at solid waste management for a planning unit, it is important to know who is generating the waste, and what types of waste are generated. It is expected that if the planning unit is growing in population, businesses and tourists, waste generation is also increasing. Also, the type of waste a resident generates will be different than for a commercial entity such as a restaurant, or an industrial generator such as a manufacturing company. Dutchess County has it all: a growing population, a vibrant business community and plenty of attractions, which draw over 4 million visitors to our County every year.

Dutchess County had a population, according to the 2020 Census, of 295,911. This is slightly lower (.5%) than reported in 2010 when the Plan was last done. Due to the Covid19 pandemic, it is very possible the population will show significant increases in 2021 estimates, as migration to the Hudson Valley from denser areas occurred in 2020, after the decennial Census was completed. Out of the total population, the 2018 Census estimates showed that Dutchess County had an average household (not living in group quarters such as a correctional institution, nursing home or college dormitory) size of 2.51, down from 2010s 2.57. Housing units increased since 2010, from 118,638 to 121,547, with 110,529 occupied, an increase from 107,965. Appendix A: Table 1, lists each of the County's municipalities and the associated population figures from 1990 to 2020, according to the U.S. Census Bureau.

Knowledge of population densities can be helpful in evaluating waste generation data and waste management methods and is necessary to estimate the composition and quantities of waste generated in the County. The New York State Department of Environmental Conservation's (DEC) waste composition and recovery projection calculators, which break out variations in the waste stream based on the percentages of urban, suburban and rural generators, as well as the percentages of residential versus commercial/institutional generators within each population density, were used for the calculations. Based on the population versus land area of each of the cities, towns and villages in the County, the population densities for the County are estimated to be 14% urban, 66% suburban and 20% rural (see Appendix B: Table 1). Based on these population densities and using State averages for residential versus commercial/institutional percentages for each population density, the weighted average for the entire County population is 57% residential and 43% commercial/institutional (see Appendix B: Table 1).

Members of the Planning Unit and Functions

The Dutchess County Division of Solid Waste Management is responsible for the formulation and implementation of programs for the collection and disposal of solid waste generated within the County. The Division of Solid Waste Management, under the direction of the Deputy Commissioner, is charged with:

- Development of the LSWMP and subsequent biennial compliance reports;
- Implementation of the Local Solid Waste Management Plan;
- Creating solid waste financial models;
- Implementing recycling initiatives;
- Oversight of the Resource Recovery Agency;
- Hauler licensing;
- Tracking waste quantities and types;
- Enforcement of Solid Waste Rules and Regulations and Local Laws;
- Implementing education and awareness programs; and,
- Providing the County Executive and County Legislature with appropriate recommendations regarding integration of both public and private facilities for accepting, hauling, processing, and disposing of solid waste.

The County Legislature, comprised of 25 part-time Legislators, is the policy-making and appropriating body of Dutchess County Government. Among the powers and duties of the Legislature, in general and for Solid Waste Management, is to adopt the County budget and enact, amend or rescind local laws, ordinances, legalizing acts or resolutions, subject to approval of the County Executive as provided by the County Charter.

The Dutchess County Resource Recovery Agency (RRA) is a county-wide local benefit corporation responsible for providing solid waste management services for Dutchess County. Since its creation in 1983, the RRA has been engaged in the planning, financing, construction and operation of a waste-to-energy facility (RRF) to process solid waste in the County.

The County consists of 30 incorporated municipalities: two cities (Poughkeepsie, Beacon), twenty towns (Amenia, Beekman, Clinton, Dover, East Fishkill, Fishkill, Hyde Park,

LaGrange, Milan, North East, Pawling, Pine Plains, Pleasant Valley, Poughkeepsie, Red Hook, Rhinebeck, Stanford, Union Vale, Wappinger, Washington), and eight villages (Fishkill, Millbrook, Millerton, Pawling, Red Hook, Rhinebeck, Tivoli, Wappingers Falls). Each municipality individually determines collection practices, whether it's municipal curbside collection, transfer stations, private collection or a combination of these methods. Appendix C, Table 1 and Map 1 list and graphically show the transfer stations within the County.

Solid waste management in Dutchess County is determined by these entities in a collaborative and cooperative manner. The goal for all concerned is to protect the health, safety and welfare of residents concerning waste management.

Connections to Neighboring Planning Units

Dutchess is part of the seven county Mid-Hudson Region which includes Ulster, Putnam, Orange, Westchester, Sullivan and Rockland counties. Each county is usually represented at the Hudson Valley Regional Council Solid Waste Committee meetings. The meetings allow for sharing of information and knowledge and open opportunities for partnerships concerning solid waste initiatives. The materials management group's task is to identify regional objectives concerning solid waste and develop a list of projects and initiatives that promote greenhouse gas emission reduction goals.

As in Dutchess, none of the seven neighboring counties have an active municipal solid waste landfill. Dutchess County and Westchester County are the only two that have a waste-to-energy facility, allowing for an in-county alternative to out-of-county landfill use. The two waste-to-energy facilities within the Mid-Hudson Region provide an alternative to the economic and environmental costs of transport to a distant MSW landfill that neighboring counties deal with. While there are discussions among the counties of siting a regional landfill as an alternative to long-haul transport of waste, discussion of a waste-to-energy alternative is also warranted. The Dutchess County facility does not have the capacity to take out-of-county waste, given the current facility size and in-county waste quantity. The RRF operates at near capacity and unless in-county waste is significantly reduced, taking outside waste is not a viable option. A waste-to-energy facility to service neighboring counties should be an option for waste management in the region, as it is a proven, environmentally sound, alternative to landfilling.

Our neighboring counties each differ in how recyclables are processed, with a mixture of in-county dual-stream or single-stream facilities, or exportation of some or all materials. Dutchess County ceased dual-stream operations in 2013. Most of the recycling goes to an in-county, privately owned, state-of-the-art single-stream facility. This facility has the ability to take some materials that not all of our neighboring planning units can accept at this time, such as clamshell plastics and milk cartons. Since not all County haulers use the in-county single-stream facility at this time, one of the tasks of the Recycling Education is to educate residents as appropriate as to where their recycling goes.

Our neighbors all share one common issue with Dutchess, and that is how to increase organics recovery and increase composting. The advantages and disadvantages of having a regional facility or several smaller local facilities is an ongoing discussion at regional meetings. The issue of having a regional facility versus local facilities is being analyzed in

terms of not just availability of a composting facility for the region, but the environmental effects of transportation for users that are not local to the facility. Some neighboring counties already have compost facilities or are looking at developing one. Dutchess County efforts to increase in-county composting will be addressed in later chapters.

While each county must have its own plan, we all must think regionally when planning to manage waste in the most economically and environmentally beneficial way. Regional networking will continue as identified in the Implementation Schedule in Appendix D under Partnerships.

Seasonal Variations and Unique Circumstances Affecting Solid Waste Management



Dutchess County Stadium

Our County is a mix of urban, suburban and rural areas. Land use is mainly residential and commercial, with some industrial uses and open space areas. There are concentrations of residential and commercial activity, mostly in our centers. The centers are the two cities, our villages and historic hamlet areas. Outside the centers are our concentrations of greenspaces. The mix provides for a wide variety of economic activities.

Dutchess County is not only a natural system of scenic and historic beauty; it is also part of an important regional economy. The multiplier effect from outside visitors in terms of restaurants, overnight accommodations and other purchases makes cultural and tourism attractions among the top economic generators in the County. Tourism effects the County year-round, with increases during the Fall, Spring and Summer. From the historic sites in Hyde Park, the majestic Bardavon Opera House in Poughkeepsie, the antique shops of Beacon and Millbrook, the Walkway Over The Hudson, Dutchess Stadium, the annual balloon festival and air show events, to the wineries, breweries and farm markets, the wide variety of area attractions that bring in the 4 million visitors are far too numerous to list.

The County contains four agricultural districts, with over 620 farms and over 102,000 acres of land being farmed. According to the 2017 U.S. Census of Agriculture, 40,133 of the acreage is cropland, with the rest used for livestock facilities, woodlands, and pastureland. The Census also shows that there are 211 equine farms and 148 cattle farms. While we did not count composting of horse or cow manure in our recycling rate, over 39,500 tons was collected by local haulers and composted.

Large institutions in the County include five colleges, seventy-five public schools and twenty-six private schools, as graphically shown in Appendix A, Map 5. Four of the colleges have significantly less students during the summer, but one holds year-round classes. Some of our larger institutions in commerce and industry include International Business Machines Corporation (IBM), Central Hudson Gas & Electric Corp., GAP Inc., and Vassar Brothers Medical Center. There are almost 8,000 businesses in the County, employing over 99,000 workers. We also have three state prisons and one jail, for an inmate population of over 5,700 according to the most recent available statistics.

The quantitative and qualitative impacts of these unique qualities of Dutchess County will be detailed in later chapters. For a more detailed look at our unique generators, Appendix A; Maps 1, 2, 3 and 4 graphically show population densities, major institutions, significant industries and retail centers, major attractions, and parks. You can also reference Dutchess County's [Greenway Connections](#) for a more detailed description of the County's unique characteristics.

Changes to the Planning Unit Since the Last Plan

Since the adoption of the 2012 Solid Waste Management Plan (SWMP) for Dutchess County there have not been any changes to the geographic boundaries of the Planning Unit. While the boundaries have not changed, there has been a slight decrease in population. Between the 2010 Census and the 2020 Census, population has decreased by 0.5%, but housing units increased by 2.8%.

In 2012 there were twenty transfer stations, both private and municipally run, with one not accepting household trash. Also, the Resource Recovery Agency facility accepted commingled recyclables and fiber. Now there are seventeen transfer stations, one still not accepting household trash, and the RRA has eliminated the recycling collection. One municipal-run station has closed and combined with a neighboring towns station. Two transfer stations closed, but can use a nearby privately-run station.

Of the 52 tasks in the 2012 Implementation Schedule there are only three (3) that we have not had success with. They are:

- Task #5, Temporary intern staff. We have not hired an intern. Should the need and/or opportunity arise, we would be open to hiring one.
- Task #19, Development of an alternative method of ash disposal. While we cooperated with the Operator of the RRF, Wheelabrator, in exploring an ash landfill site in a nearby county, the proposal was unsuccessful. We will continue to investigate other uses for the ash but are currently still using it for ADC at upstate landfills.
- Task #21, Support PAYT concept and initiate community pilot. As the County does not operate any transfer stations or do any collection services, the County cannot offer a PAYT system. There are municipalities with transfer stations, where residents can purchase either a permit and/or pay per bag fees and this is an option for a limited number of residents. In the municipalities this is offered, not all residents choose to bring their waste to the transfer

station. A large portion of residents use a private hauler. Some haulers offer a “senior” size cart at a reduced rate, but this is as close as they get to a PAYT system. One village that offered a per bag rate and did municipal pickup, stopped this service in 2013. They found that most residents preferred to hire a private hauler rather than having to pay for and pickup bags. We would still be willing to assist in developing a PAYT system within the County, but do not foresee this happening.

Historic Management Practices and Changes

The historic management practice for solid waste, before the opening of the RRF in 1989, was the use of landfills. In 1992, when the first Solid Waste Management Plan for Dutchess County was adopted, there were seven operating landfills and 115 inactive landfill sites, with over 60 of the inactive landfills identified as hazardous waste disposal sites. At that time all remaining active landfills were in the process of being phased out, which was completed by end of 1992. The Plan called for wastes currently being landfilled at these remaining sites to be either source separated for recycling or brought to the RRF. But it was also recognized that there would still be a need for a landfill for wastes beyond the RRFs capacity and for residual ash waste. Plans for an ash residue disposal site, a residual solid waste land disposal facility and a composting facility were identified. None of these were ever constructed. However, there are plans to continue to seek alternatives to long-distance ash disposal, to minimize and eventually eliminate the need for solid waste landfill disposal and to expand composting opportunities.

According to a survey done in June of 1990 for the 1992 Plan, only 4 of the 30 municipalities had mandatory recycling programs. The survey, done for residential, commercial, institutions and major industry sectors, also revealed that, in general, recycling activity had just barely begun in most areas. In 1990 Dutchess County adopted the county-wide source separation law for recyclables, Local Law No. 4 of 1990, which took effect January 1, 1991. With the implementation of this law in 1991, both residential and commercial recyclable materials generated were required to be source separated. In 1990 the Dutchess County Materials Recovery Facility opened to process the recyclables, with oversight of the facility by the DCRRA. The law for recyclables was updated in 2014 with Local Law 3 of 2014. In 2012 the DCRRA recycling facility closed, with most County recycling now going to Republic Services in the City of Beacon.

Historically, collection of solid waste materials has been done through private collection, municipal-run collection and drop-off at transfer stations, and this is still true today. Collection of household hazardous waste (HHW) by the County, through the RRA, started in 1990 with a one-day collection event. The RRA between 2012 and 2014 held 8 collection events per year and dropped down to one event in 2015. The County took over hosting the events in 2016 with two events in 2016 and 2017. Since 2018 the County has held three collection events per year.

Chapter 2: Waste Generation and Materials Recovery



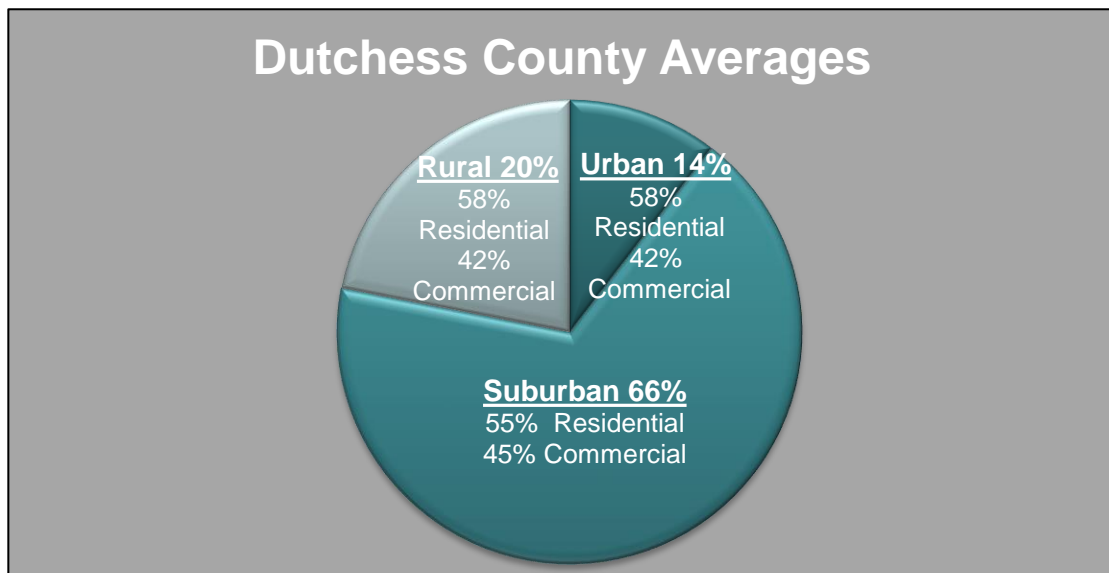
Dutchess County estimates of solid waste generation quantities and composition, found in Appendix B, Table 2, MSW Detailed Composition Analysis were calculated using:

- Annual recycling and waste disposal data collected by the Dutchess County Division of Solid Waste Management;
- *2020 Facility Annual Reports* (Facility Report), to NYS DEC from waste destination facilities;
- The NYS DEC Composition Calculators;
- 2020 U.S Census.

Sources for the numbers used for the Detailed Analysis are as follows:

- For MSW total tons generated the number was based on the totals for disposed MSW and recycled MSW, which are based on a combination of the 2020 annual data collected by the Division of Solid Waste and the 2020 Facility Reports.
- For the tons generated by material and percent of total by material, the statewide recovery rate percentages were used.
- For the 2020 (Actual) tons diverted column the numbers were based on a combination of the 2020 Dutchess County Solid Waste data and the 2020 Facility Reports.
- In the tons diverted column the subcategories for certain materials are estimates based on recovery rate percentages when actual data was not available. The rates were obtained from the in-county single stream recycling facility.
 - For example, since the County is primarily single-stream collection percentage estimates had to be used for the sub-categories within paper, metal, plastic and glass when actual numbers were not available.
- The 2021 to 2030 projection columns were based on the NYS DEC Composition Calculators and estimations of diversion based on the implementation of the tasks as listed on Appendix D, Table 1, Implementation Schedule.

- The DEC waste composition tool first requires determination of the population in rural, suburban or urban densities, shown in Appendix B, Table 2, Detailed Composition Analysis. The composition tool estimates types and quantities of wastes based on rural, urban and suburban populations, as well as the percentages of residential and commercial/institutional populations within those sectors. The residential versus commercial/institutional percentages are State averages from the NYS DEC MSW detailed composition analysis calculator tool. The total amount of waste generated in Dutchess County in 2020 was then determined using annual data collected by the Division of Solid Waste and the 2020 Facility Reports.



Municipal Solid Waste

The Division of Solid Waste collects disposal and recycling data annually from haulers licensed in Dutchess County and from municipalities that have their own hauling. Currently 47 licensed haulers and 4 (four) municipalities. We ask for tonnage collected within the County, by type of material, and where the tonnage is taken. We also request tonnage disposed by type of material from over 30 businesses and the 17 transfer stations. For post-recycled MSW we know the exact amount disposed of at the RRF. We then add what is taken to landfills, relying mainly on reporting from the DEC Annual Landfill Facility Reports. The annual data collection is also used for recycling numbers. The data is reviewed so as not to double-count materials. For example, if a scrap metal recycler provides us data and we know that the hauler brings the scrap metal reported to this recycler, we don't count both numbers. Since the County has only one facility, the RRF, that is the only one we have absolute numbers for.

Of note, we are using 2020 data, which was a very strange year. The Covid-19 (Covid) pandemic started early March 2020 and seems to have also affected our waste generation and recycling numbers. Due to the closure of many businesses in the early part of the year, as well as residents working from home in greater numbers, waste generation changed. In April there was a drop in MSW disposed, as compared to previous years. It was attributed to commercial waste being down due to closures and limited, if any, in-person staffing. The rest

of 2020 saw comparatively average disposal. There were residents working/schooling at home, disposing of garbage that might have been disposed of at places of work in other counties and a lot of home clean-outs. Some business entities increased delivery and curb-side pick-up services mid-year. MSW generation rebounded, but not at previous levels.

MSW generated was the lowest since 2016. Since 2010, the base year for the previous Plan, annual generation had increased every year. From 275,208 tons in 2010 to 381,431 tons in 2019. In 2020 the generation was 331,203 tons.

Recycling rates also changed in 2020, being the lowest since 2013. The recycling rate, which had increased every year, going from 23% in 2010 to 44% in 2019, was 35% in 2020. While the recycling rate is affected by the weight of the materials, with heavier materials such as newspaper and magazines declining and lighter weight packaging increasing, bringing the total weight of recycling down, it does not explain the large decrease from 2019 to 2020.

One factor for the decrease might be the closure of businesses, with less paper, cardboard and other recyclables being generated, temporarily affecting the rate. Also, during the pandemic, many entities that divert food waste for composting temporarily halted the practice due to many composting facilities not accepting materials during the pandemic. Can and bottle redemption facilities, textile donation boxes and plastic film recycling containers were also temporarily shut down, possibly causing more of these recyclable materials be thrown away rather than recycled. The end result shows a decrease in both post-recycled and recycled materials.

Time will tell if MSW generation and recycling returns to pre-pandemic levels. We will continue to track generation and recycling annually and, if needed, update projections during the Biennial Compliance update to DEC.

The data collected for 2020 shows that of the 331,203 tons of municipal solid waste generated in 2020 in Dutchess County, we diverted 114,951 tons, for a diversion percentage of 34.7%. The latest country-wide recycling rate, according to the Environmental Protection Agency (EPA), was estimated to be 32.1% in 2018. This puts Dutchess County above average for the Country.

Dutchess County has a very high recycling rate for metals. This is due to having a waste-to-energy facility, where the ferrous metals are recovered from the ash after the burn and recycled with a local scrap metal recycler. Over 6,000 tons of metals are recycled annually by the facility, which if landfilled would be lost.

The 2020 base numbers reflect known data for Dutchess County, but there are some flaws in relying on the data from the 2020 Division annual data collection. Not all recycling data is collected on a consistent basis. A lot is done by voluntary survey, so not all recycling is reported and reflected in the data. Therefore, these numbers are likely an underestimation, as they do not capture all recycling in the County that fall outside our current data reporting/collection program.

The 2020 data shows that of the remaining 216,252 tons of MSW, 149,036 tons were disposed of at the RRF, where it was converted to electricity and the metals recovered for recycling. 60,754 tons were sent to upstate landfills and 6,462 tons were sent to the waste-to-

energy facility in Westchester County. In 2020 the RRF processed less than normal due to unexpected downtime at the Facility, increasing what was sent to other locations. The Dutchess County RRF processed 69% of the disposed post-recycling MSW that was generated in Dutchess County in 2020. Normally, approximately 73% of total post-recycled Dutchess County MSW is processed in-county at the RRF. This is what is expected again in the future.

Construction and Demolition debris (C&D)

The same process was used to determine Construction and Demolition debris (C & D) generation and diversion rates. Appendix B, Table 7 shows that an estimated 17% of C & D is generated by the residential sector, 25% by the non-residential sector, and 58% by infrastructure and other. Using the 2020 Division of Solid Waste annual survey data and the 2020 DEC Facility Annual Reports, Dutchess County generated 149,066 tons of C & D debris and diverted 64,583 tons, resulting in a diversion rate of 43.3%. For details and projections see Appendix B, Table 6 and Table 7.

The County is fortunate to have several C&D debris recycling facilities for haulers to use. In-county there are outlets for concrete, rock, asphalt, wood, clean soil and other debris generated that is recycled for other uses. This allows a large percentage of C&D debris to be reused. A large percentage that is not recycled is used as ADC at landfills. While not recycled, it is put to a beneficial use as landfill cover.

Again, 2020 showed a change in C&D debris generation numbers due to Covid. There was a big slowdown in construction, therefore a large drop in tons generated. The estimates show that there was over 22,000 less tons generated than the previous year. While homeowners did some renovations and clean-outs, there was less construction and building. This should change starting in 2021 as construction is back, as well as renovations. This will be tracked and updated during the biennial compliance reports.

There are numerous private facilities within the County that dispose of and/or recycle concrete and other masonry waste as identified on the Private In-County Facilities table Chapter 3. The RRF does not accept C & D materials and encourages private haulers to keep these materials separate for proper disposal or recycling at a C & D processing facility. The County Highway Department pavement maintenance and rehabilitation program includes cold in-place and hot in-place reclamation overlays.

A portion of our Construction and Demolition debris (C & D) goes to landfills for disposal or for a beneficial reuse as an alternate daily cover (ADC) at a landfill. In 2020, of the approximate 149,066 tons of C & D generated, over 54,000 tons of processed C & D was used as ADC at New York State landfills and under 30,000 tons was disposed of at New York State landfills. The rest was recycled. The County and nearby counties have C & D recyclers available, turning it into other uses such as clean fill or reusing as roadbed material.

Commercial / Institutional Waste:

The County has a large commercial and institutional base. In 2020, due to the pandemic this waste sector saw a significant decrease in waste generation but is normally a large part of our waste generation. Most of both commercial and institutional waste is collected by haulers

that annually report to us. In addition, we request information from large commercial and institutional waste generators to determine how much waste is generated by individual entities and to capture wastes not handled by reporting haulers, such as hazardous waste or for the few entities that do on-site composting.

Industrial Waste:

Industrial waste includes discarded materials generated by manufacturing or industrial processes. One of the larger manufactures in Dutchess County is IBM. Solid waste materials generated include electronics, corrugated cardboard and office paper. We collect data annually from individual industrial entities such as IBM and Central Hudson. According to 2020 DEC Facility Reports, over 1,900 tons of waste classified as industrial went to upstate landfills.

Biosolids (sewage sludge):

There is one in-county compost facility for biosolids, Tri-Municipal Sewage. According to NYS DEC POTW (publicly owned treatment works) Use/Disposal Information, composting, landfill and incineration are the methods used to dispose of or reuse biosolids. In 2020, using the Division's Annual Survey data and DEC's facility reports, over 8,100 tons of sludge was landfilled and/or incinerated and over 5,900 tons was composted. These numbers were not included in our waste generation and recycling Waste Calculator.

Summary assessment:

New sources of information for disposal and recycling are always being looked for. We have not had much success, to-date, in collecting data for certain materials, such as textile donations. Textile and household good donations in drop-off bins or by reuse retail programs are definitely under-reported. Recently we have tried to collect data from brewers concerning by-product disposal, as this is an industry that is currently thriving in the county, without much success as-of-yet.

The County will continue to explore ways to track the types and volume of these recyclable materials generated within Dutchess County. We will work with New York State and other Solid Waste Planning Units to identify ways to better track these waste streams as part of our Reduce and Reuse and Partnership tasks outlined within the Implementation Schedule, Appendix D, Table 1.

Chapter 3: Existing Solid Waste Management Description



Dutchess County Waste-to-Energy Facility

Facilities:

Dutchess County's solid waste is managed through a combination of public and private facilities. For municipal solid waste disposal, the Resource Recovery Agency oversees the waste-to-energy facility, which is currently operated by WIN Waste Innovations Dutchess County, LLC (formerly known as Wheelabrator Dutchess County LLC). The RRA entered into an agreement with the County, called the *Solid Waste Disposal Agreement of 1984* (most recently amended in 2007), to furnish the County with the service of accepting, processing and/or disposing of solid waste within the County. The RRA owns the site and buildings.

The RRF, by NYS DEC Permit, has a waste capacity of 164,000 tons per year and a turbine that converts energy from the waste, which is then sold to Central Hudson Gas & Electric under the *Power Sales Agreement*. The RRF is fully operational and will remain functional, with routine maintenance, for the life of the Plan and beyond. In 2020, 149,037 tons of MSW generated within the County was disposed of at the RRF. This does not include almost 6,000 tons that had to be diverted from the facility due to maintenance downtime in 2020. Normally, the facility disposes of approximately 73% of post-recycled waste generated in Dutchess County, with the remainder going to either the waste-to-energy facility in Westchester or out-of-county landfills. The facility can turn 450 tons of MSW into 9.3 megawatts (MW) of power every day, enough to power over 10,000 homes. Private haulers and municipal haulers bring waste to the facility. No recyclables or hazardous waste is accepted at the facility, or waste from unlicensed haulers.

For recyclables processing, most County recycling goes to Republic Services in the City of Beacon. Republic is a privately owned company that owns and operates the single-stream facility. The facility accepts recycling from Dutchess County as well as surrounding counties. Some Dutchess County recycling goes to the Ulster County Resource Recovery Agency in Kingston, which now only accepts dual-stream recycling. Many of the northwestern towns and villages use the Kingston location, such as the Village of Red Hook.

Neither the RRA nor the County provides collection services or owns or operates a MSW transfer station. The RRA site does provide drop-off for textile collection through Salvation Army bins.

Of the thirty municipalities, fifteen have transfer stations (drop off areas for MSW). The Towns of Amenia, Dover, Beekman, Fishkill, East Fishkill, Pine Plains, and North East do not have a

municipal transfer station. One town with a transfer station, the Town of Poughkeepsie, does not accept waste or recyclables but accepts yard waste, some bulk materials and metals. Some villages have the use of the adjacent town's transfer station, one town can use a neighboring town's station and two towns have access to a privately-run station. Collection methods for residents not using the transfer station, or with no available transfer station, can be by private collection, municipal collection or municipal-wide collection on a contract basis with a private hauler. Operation of the municipal transfer stations is either by the municipality or by contract with a private company.

There are a variety of services offered at the transfer stations other than garbage and recycling collection, such as bulk collection days for larger materials (couches for example) or electronics collection days. There is also a variety of materials accepted at the transfer stations, such as yard waste or tires. If "compost" is listed, they have a composting facility for yard waste. The Village and Town of Fishkill have a compost site for yard waste, but no transfer station. Appendix C, Table 1 provides more information on the transfer stations and what they accept, and Appendix C, Map 1 provides a map of the transfer station locations.

Residents of municipalities with transfer stations that accept MSW have the option of using the transfer station or contracting for private pick-up. Some municipalities charge an annual fee for the use of the transfer station, usually with a senior citizen rate option, and then charge a per bag fee, which varies depending on the size of the bag. Some of the facilities now charge for recyclables, but at a lower fee than MSW.

Some MSW is taken to waste-to-energy facilities in other counties. According to the *2020 Facility Annual Report* data from NYS DEC, 6,462 tons of MSW was taken to the waste-to-energy facility in Westchester, Peekskill, N.Y., approximately 32 miles from Dutchess.

A portion of the MSW is transported to out-of-county landfills. In 2020, approximately 60,754 tons of residential/institutional and commercial MSW went to out-of-county landfills. The closest landfill that MSW was transported to is over 240 miles from Dutchess County. Some of the MSW was taken to the Ulster County Resource Recovery Agency transfer station to then be transported to a landfill.

The waste capacity at the RRF is expected to remain 164,000 tons per year. The capacity of the RRF, and the remaining capacity at New York State landfills, is adequate to handle waste generated within Dutchess County for the Plan timeframe.

Municipal Transfer Stations		
Facility Name	Materials	Operating Status
City of Beacon	MSW/Recyclables/Compost	Part-time ***
Town of Clinton	MSW/Recyclables	Part-time
Town of Hyde Park	MSW/Recyclables	Part-time
Town of LaGrange	MSW/Recyclables	Part-time
Town of Milan	MSW/Recyclables	Part-time
Town of Pawling*	MSW/Recyclables/Compost	Part-time
Town of Pleasant Valley	MSW/Recyclables	Part-time
City of Poughkeepsie	MSW/Recyclables/Compost	Part-time
Town of Poughkeepsie	Bulk/Yard Waste	Part-time
Town of Red Hook*	MSW/Recyclables	Part-time
Town of Rhinebeck*	MSW/Recyclables/Compost	Part-time
Town of Stanford	MSW/Recyclables	Part-time
Town of Union Vale	MSW/Recyclables	Part-time
Town of Wappinger**	MSW/Recyclables/Compost	Part-time
Town of Washington*	MSW/Recyclables/Compost	Part-time
<p>*Village also has use of transfer station **Village residents within Town of Wappinger only. ***Hours and days vary at each transfer station. Dutchess County Solid Waste Management keeps up-to-date contact and operating status on our website.</p>		

Private In-County Facilities	
Facility Name	Materials Managed/Products
American Lamp Recycling, Wappinger	Universal waste ⁴ , lighting recycling
A & W Scrap Processors, Wappinger	Scrap metal
Baroni Scrap Metal, Poughkeepsie	Scrap metal
Blacktop Maintenance Corp., Poughkeepsie	C&D ¹ processing (inerts ² only)
Duffy Layton, Inc., Stanford	Yard waste compost, wood mulch
Harlem Valley Transfer Station, Dover	MSW ³ transfer station
McEnroe Organic Farm, North East	Organics compost
Republic Recycling, Beacon	Source-separated recyclables
Recycle Depot, Poughkeepsie	C&D ¹ and concrete and masonry processing, wood mulch
Recycling Crushing Technology (RCT), Poughkeepsie	Concrete and masonry processing
Royal Carting, East Fishkill	MSW ³ transfer station, C&D ¹
Robb Brothers Farm, LLC, Pawling	Yard waste compost
Soil Tech, Hyde Park	C&D ¹ processing (inerts ² only)
Sweet Peet, Pawling	Manure compost
Thalle Industries, Inc., Fishkill	C&D ¹ processing (inerts ² only)
Westhook Sand & Gravel, East Fishkill	C&D ¹ processing (inerts ² only), yard waste compost
Retailers, county wide	Plastic bags, cell phones, e-waste, batteries
¹ “C&D” is Construction and Demolition Debris ² “Inerts only” refers to the acceptance and processing of materials such as concrete, asphalt, pavement, brick soil and rock for recycling ³ Municipal Solid Waste ⁴ Universal waste means any of the following hazardous wastes that are subject to the universal waste requirements of NYS DEC Subpart 374-3:	

Out-of-County Facilities¹	
Facility Name	Materials Managed/Products
Carmen Barbato Inc., Columbia County	MSW transfer station, C&D
Community Composting, Ulster County	Food scraps, yard waste
Chemung County Landfill	MSW, ash residue
Colonie Landfill, Albany County	Ash residue
Greenway Environmental, Ulster County	Food scraps, yard waste
LeMela Sanitation, Ulster County	C&D, yard waste, metals, single stream
Oak Ridge Waste & Recycling, CT	MSW, C&D, single stream
Ontario County Landfill	MSW, ash residue
Ulster County RRA, Ulster County	MSW ³ transfer station. dual stream, organics
Waste Management, Ulster County	MSW, single stream, C&D
Westchester WIN Waste, Westchester County	MSW
¹ This is a partial list, based on facilities local licensed haulers are known to operate and/or use.	

Programs:



Republic Materials Recycling Facility, Beacon (formerly ReCommunity)

Recyclables collection and processing:

The County requires recyclable materials to be source separated under [Local Law No. 3 of 2014](#). The Law states that all residents, including those in multi-family housing, all businesses and all entities provide for recycling. This means that recyclable materials must be segregated from the waste stream at the point of generation for separate collection.

Collection of recyclables is done either through private haulers or at transfer stations. The majority of recycling goes to Republic for processing, approximately 77%. The County promotes the use of the privately-run single stream facility as a way to increase recycling, as it accepts an expanded list of materials and is an easier method of recycling. Some recycling goes to Ulster County Resource Recovery Agency for processing, approximately 20%. The facility accepts dual-stream commingled and paper products. All recyclable materials are processed at the privately-run facility or at facilities in neighboring counties.

Fourteen transfer stations, both municipal and privately run, accept recyclables. The rates for use of the transfer stations vary, but the use of this option, in most cases, is financially beneficial to the resident. In some municipalities there is no annual fee and it is a “pay as you throw” system. A resident has monetary incentive at these facilities to minimize garbage that needs to be bagged and paid for and to maximize recyclables which are generally free of charge or a lower rate. For residents with private hauler collection, most offer a reduced rate for a recycling bin with a smaller waste bin. Again, this provides financial incentive to reduce and recycle.

Recycling collection will continue to be through curbside collection and transfer station drop off. All haulers and transfer stations have the ability to accept recyclable materials. The private in-county recycling facility can handle all of Dutchess County’s recyclable material, as well as materials from surrounding counties.



Household Hazardous Waste collection

Household Hazardous Waste (HHW) and E-waste:

From 1990 to 2015 the RRA sponsored HHW and E-waste collection events. Since 2016 the County has hosted the household hazardous waste collections days. Currently the County holds three (3) events per year. Residents can bring in containers that are marked with, “Warning: Hazardous, Flammable, Poisonous, Corrosive” and electronic equipment. It is estimated that 60-70 tons of electronics, 30,000 gallons of hazardous chemicals and 800-900 lamps (fluorescent lights and compact fluorescent lamps) are recycled at these events every year. The County contracts with ACV Enviro and ERI to divert the materials from the waste stream responsibly.

The County and RRA websites have a dedicated page to help residents manage and dispose of HHW, with information on various types of waste, and how and where to dispose of the materials. A copy of the 2021 HHW events flyer can be found in Appendix C. For website information: [Dutchess County Solid Waste Management](#) and [Dutchess County Resource Recovery Agency](#).

The HHW events hosted by the County and partially funded by the NYS Department of Environmental Conservation, does a good job in safely disposing of household hazardous waste. The events are promoted through media, flyers and websites.

The County, since 2015, also holds events for Conditionally Exempt Small Quantity Generators (CESQG) of hazardous waste. This was identified as a task in the 2012 Plan and has been successful since implementation. One event is held per year and there are normally 10 – 20 participants. Mainly schools, municipalities and small businesses attend the events.

Pharmaceuticals:

The County, through the Stop DWI Program, has eleven pharmaceutical drop boxes at various law enforcement sites around the County. The waste-to-energy facility provides Dutchess County, and surrounding counties, the ability to safely dispose of pharmaceuticals at no cost to the participants, keeping toxins out of the soils, water and the hands of children. Taking medications to waste-to-energy facilities, such as the RRA's, is promoted by NYS State and the U.S. Environmental Protection Agency as the preferred method of disposal rather than flushing.

In 2019, pre-pandemic, over 11,000 pounds of medications were disposed of at the RRF, from both in-county and out-of-county sources. The quantity of medications destroyed, with the exception of 2020, has gone up every year. This shows the success

of the drop box programs throughout the state.

Organics recovery:

Yard waste: Yard waste is not accepted at the RRF but is accepted at most of the fifteen local transfer stations within the County (see Appendix C, Table 1). Some municipalities also offer seasonal curbside pick-up of yard waste on designated days. There is no County program for the collection or composting of yard waste and residents are encouraged to backyard compost. There is information about composting on the Solid Waste and RRA websites and they also provide a list of facilities that offer composting services for both yard and food waste. The Division of Solid Waste sells compost bins to residents at cost. Since initiating this program in 2017, 61 compost bins have been sold. In addition, Cornell Cooperative Extension of Dutchess County offers programs on composting and has a composting demonstration area featuring different types of composting systems suitable for home use.

Yard waste is composted at some municipal facilities, with some offering free woodchips and mulch to residents. IBM, Bard College, Vassar College, Culinary Institute of America, Dutchess Community College and Marist College are just a few institutions that also recycle yard waste. Compost facilities in the County that take yard waste for a fee include McEnroe Organic Farm, Westhook Sand & Gravel, Duffy Layton, Recycle Depot, Robb Brothers Farm and two facilities offer stump recycling, Outback Stump Recycling and Recycle Depot.

Municipalities in Dutchess have access to drop-off locations and/or curbside seasonal pick-up of yard waste. The yard waste is composted and used for municipal landscaping needs and in many cases is available to residents.

Food Waste:



There is only one in-county composting facility that accepts food and yard waste from entities and residents, which is McEnroe Organic Farm in the Town of North East. McEnroe Farm operates under a NYS DEC permit which allows for processing of up to 40,000 cubic yards per year. They accept food waste, manure from horse and dairy farms, leaves, brush, grass clippings and other organics.

McEnroe Organic Farm compost operation

There are some programs within the County that have composting initiatives to increase food scrap diversion. The O Zone in Red Hook offers residents and commercial entities drop-off or pick-up of food scraps, for a fee, to be taken to the Ulster County facility. The Community Compost Co. with a facility in Ulster County, offers food scrap drop-off at farmers' markets for a fee, including the Beacon Farmers Market.

A large amount of food waste goes to out-of-county composting facilities, such as in Ulster County. Haulers permitted to haul organics, of which we currently have six (6)

licensed within the County, will normally bring the materials to the closest and easiest to get to facility. While McEnroe's can accept most food scraps generated within the County, most of our large food scrap generators are on the western side of the County.

Many of the larger food scrap generators are currently donating usable food and composting the rest of the food scraps. In 2020, according to our annual hauler reports, over 1,200 tons of food scraps were composted. This is way below what we had seen in the past, again probably due to the pandemic. In 2019, over 2,100 tons were collected and composted. In addition, over 340 tons of oil/renderings were recycled or composted in 2020 and over 470 tons in 2019. We will add entities to our reporting as they comply with the 2022 DEC Food Donation and Food Scraps Recycling Law.

Since 2007 all five colleges within the County have had ongoing diversion programs for food waste recovery as part of their extensive sustainability and recycling programs. The colleges either compost food waste on-site or transport, through private haulers, to an off-site location such as McEnroe Organic Farm in the Town of North East. One other institution diverting food scraps from the waste stream is the Omega Institute in Rhinebeck. They collect food scraps from their dining hall and café for composting at McEnroe Organic Farm.

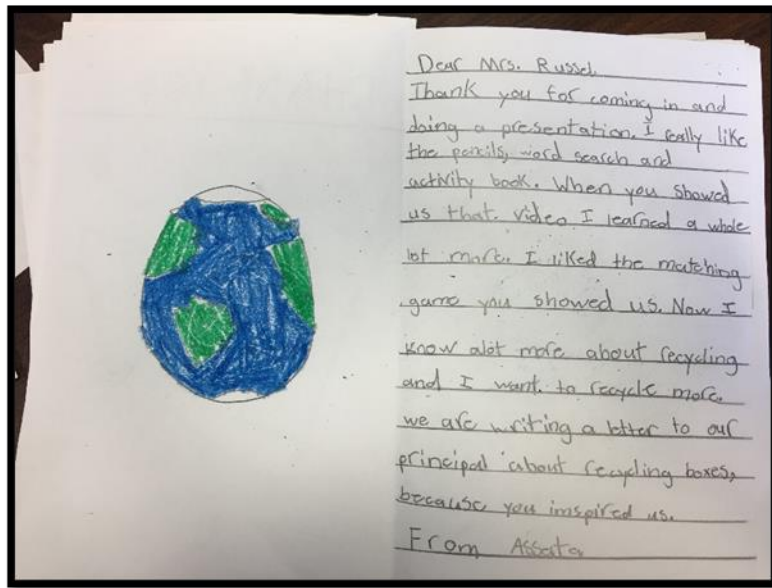
Two state prisons in Dutchess County also compost food residuals. The composting operation for Green Haven Prison and Fishkill Correctional are on the grounds of the prison. The compost is used on-site and exact quantities is unknown.

The County will continue to identify entities with food diversion programs, better identify quantities that are being diverted and identify available composting capacity. The Implementation Schedule also includes tasks that will promote, and hopefully increase the quantities and entities diverting food wastes.

Animal Mortality Composting:

Dutchess County DPW responds to deer mortalities on county roads. Previous to 2004, the County had been landfilling the carcasses, but when the landfill no longer accepted the carcasses, the County participated in a deer composting pilot project with Green Haven Correctional Facility. Based on the success of the project in 2005 Dutchess County DPW, in cooperation with NYS DEC, began composting deer carcasses at the Millbrook DPW Outpost. DPW continues to compost about 400 deer mortalities yearly.

Public outreach and education:



Student letter thanking the Dutchess County Recycling Educator

The County has a full-time Recycling Educator (RE) who promotes recycling, reuse and reduction of materials. The RE promotes single stream recycling to most municipalities in the County. Some municipalities use the Ulster County transfer station, which is dual stream. The Educator provides the appropriate recycling education depending on where the residents live. Currently a main theme for the Educator is minimizing recycling contamination. This was found to be a problem, especially in single stream collection, and promoting what materials to keep out of the recycling stream has been a major focus.

During the pandemic, many in-person presentations were cancelled. Presentations to schools, libraries and other groups were done remotely. The Educator also developed videos for teachers to use in remote learning, as well as general videos for the public. For 2021 Earth Day promotion the Educator developed a video and while mainly for elementary school children, it's educational for everyone. YouTube video: [Earth Day Recycling Video](#). To learn about why we should recycle and what to recycle the Educator developed this video. YouTube video: [Dutchess County Recycling Video](#).

While we hope to go back to in-person presentations, the videos and opportunities for remote learning will continue and educational opportunities will always adapt to circumstances. Recycling promotion and education did not stop due to the pandemic and will continue to evolve to meet the needs of our residents.

RRA staff and County staff also promote recycling through in-person presentations, media releases, the Solid Waste [website](#) and tours. All tours of the waste-to-energy facility include information concerning Dutchess County recycling, and the promotion of recycling and reuse. The RE also sets up a recycling educational booth at several events, including the County's Senior Picnics, reaching over 1500 residents that attend the events every year.

Pre-pandemic the Division promoted recycling through annual Earth Day events in partnership with the National Park Service and NYS DEC. The events promoted composting, recycling and reuse, along with an electronics collection program. We also helped with the zero waste initiative for the annual Walkway Marathon. It is unknown if either of these events will return, but the Division is always open to helping with events that promote reduction, reuse and recycling.

The Division has also targeted specific types of businesses on how and what to recycle, such as gas stations/convenience stores, hotels/motels, multi-family housing, and restaurants. Site visits were conducted, and educational materials were given to these entities with recycling tips specific to their business.

Recent examples of efforts to increase recycling and promote reduce/reuse are:

- In 2020 the Division obtained 155 recycling bins, through a grant obtained by Dutchess County Soil & Water, for use in public buildings. A survey was then done of all County offices, as was first done in 2013, to determine the need for additional recycling bins. Forty-eight bins were given out to increase office recycling. An additional 74 bins were given to municipal offices to increase recycling. We continue to identify places in need for the remaining bins and identify if this effort increased recycling.
- The Division's website is continually updated to keep residents informed about recycling. Starting in 2020 a monthly newsletter, based on NYS DEC's Recycle Right NY Campaign, has been published for Dutchess County. Each month we focus on a recycling topic to support efforts to reduce contamination in household recycling across Dutchess County. Our most recent newsletter, for June 2021, we focused on where your recyclables go once you put them in the recycle bin. [View or download the Discover the Journey of Recyclables flyer \(.pdf\)](#)
- The RE works with Cornell Cooperative Extension Dutchess County and Dutchess Environmental Management Council on a Single Use Plastic Prevention (SUPP) campaign. The campaign is to promote the reduction of single use plastics, working with residents and local businesses.
- In 2017 Dutchess County enacted a law which prohibits the use of polystyrene foam food containers in the County by chain food service establishments. This was followed by a plastic film ban in January of 2020, which was superseded by New York State single-use plastic bag ban in March of 2020.



County Executive, Marcus Molinaro, signing the polystyrene ban into law at West Road Intermediate School



Recycle bin at Bowdoin Park.

County parks and Dutchess Stadium provide recycling bins and collection. The Rail Trails are carry in/carry out parks. In 2013 we were awarded 25 Keep America Beautiful and Dr. Pepper/Snapple public space recycling bins for use in Bowdoin and Wilcox County Parks. The bins are used to increase recycling at our most used parks. County offices also recycle paper, commingled, ink cartridges, waste oil, light bulbs, spent aerosol cans, electronics, tires, batteries and motor oil.

Local colleges, secondary and elementary schools, as well as numerous local civic organizations, promote recycling. The colleges have extensive reduction and recycling programs, including “trayless dining”, food weighing systems for organics reduction, free-cycle programs, compostable utensils and reusable containers, as well as convenient and plentiful recycling containers available throughout the campuses. Local civic organizations hold forums and presentations concerning recycling.

All of the larger institutions such as IBM Corp, supermarkets, shopping malls and schools have recycling programs in place. Paper and cardboard comprise a large portion of the materials from manufacturing, offices and schools; therefore, it is a large part of the County’s commercial/institutional waste stream. In addition, many large grocery stores are now diverting food waste to food banks and composting programs and are doing the majority of food diversion efforts in the County.

One of the County’s largest events, the Dutchess County Fair, has a Green Initiative Program. The program ensures that none of the approximate 97 tons of solid waste generated at the fair goes to a landfill. What is not recycled goes to the waste-to-energy facility to produce electricity. The Dutchess County Agricultural Society continually increase efforts to decrease the amount of materials disposed of, and increase the amount recycled, at all events held at the fairgrounds.

There are also materials that are recycled and/or reused, but primary oversight is done by New York State. Many of these wastes fall under the Product Stewardship program and are difficult to track at the County level. Product Stewardship, also known as extended producer responsibility (EPR), extends the role and responsibility of a manufacturer (also known as the producer or brand owner) of a product or package to cover the entire life cycle of the product. Stewardship can be either voluntary or required by law. New York State has adopted in law and regulations product stewardship requirements for a number of problem wastes, including electronics, rechargeable batteries and plastic bags.

The NYS DEC [website](#) provides a wealth of information concerning product stewardship and take back programs. As stated on their website, “Product stewardship can be a powerful driver for the reduction of waste volume and toxicity. By placing the responsibility for end-of-life management on the manufacturer, these programs ensure that end-of-life impacts of the product or package are considered during the earliest

stages of design. Product stewardship programs create incentives for manufacturers to redesign products and packaging to be less toxic, less bulky and lighter, as well as more recyclable. Reducing material use and toxicity and increasing recycling results in significant environmental, economic, energy and GHG reduction benefits.”

The [RRA](#) and [County](#) websites also provide information on local resources for take back programs, as well as information on what products require product stewardship by the retailer, such as automotive batteries and small electronics. The County fully supports all efforts by New York State and other National Product Stewardship programs to properly recycle or dispose of wastes, and compliance and promotion of EPR is identified as a task on the Implementation Schedule under Reduce and Reuse. In 2022 one of the County’s main focuses for promotion will be for the New York paint stewardship program.

The County plans to continue efforts to partner with municipalities, event sponsors and institutions to better identify how much waste is generated, how much is recycled and to identify ways to increase recycling and decrease waste generation.

Efforts to enforce local disposal and recycling laws:

The Division of Solid Waste has a full-time Compliance Inspector who investigates complaints of no recycling or no recycling provisions and enforces the County solid waste hauler licensing law. Per Local Law No. 3 of 2014, entities are subject to fines if recycling equipment is not provided, and haulers must provide collection for and recycle source separated material. Residents who have a complaint about non-recycling can provide information through our online [recycling complaint](#) form or by calling or emailing the Division. All complaints are investigated and followed-up on to ensure recycling is provided. No fines have been issued for non-recycling, as all follow-up visits to entities have confirmed compliance with the Law.

Volume-based pricing incentives:

As the County does not collect waste or have transfer stations, all incentives are done through others. Most private haulers offer a “senior cart” option for collection, which is a smaller cart at a reduced price. Some transfer stations offer a reduced fee for smaller bags of MSW and a reduced or no fee pricing for recycling.

Recycling market agreements:

The County does not own a recycling facility. The privately owned facility does all recycling market agreements.

Local hauler licensing:

One of the other main functions of the Compliance Inspector is to ensure anyone doing solid waste business in the County is licensed by the County. For all entities submitting for a License, they must complete the [application](#), go through a background investigation and provide proof of insurance. Once a license is issued, they must be

renewed every two years. Since the last plan we have fined five (5) non-licensed haulers and added 28 haulers working in the County, for a total of 47 licensed haulers.

Recycling data collection efforts:

As part of Local Law No. 3 of 2014, all haulers are required to submit an [Annual MSW Report Form](#). This is a requirement to obtain required vehicle stickers and to renew a license. We ask for a breakout of the types of materials collected and the disposal site for the materials. We also send forms to transfer stations and to over 75 [businesses and commercial](#) generators. When collecting the data, we ensure that we are not double counting. For example: if a business reports recycling is collected by a licensed hauler, we do not count it, as we have the data from the hauler.

We also look at data collected by DEC and published on their FTP site. Landfill data and recycling data from entities that provide information to DEC, is added to our data. The MSW taken to the waste-to-energy facility is known and from what licensed haulers. The recycling facility also provides a report to us and from what entities. All this information is gathered and reviewed to make sure we capture all the data we can and eliminate double counting.

Summary Assessment:

Dutchess County has access to the facilities needed to have a successful solid waste management program. We have a waste-to-energy facility that processes waste in an environmentally sound manner, recovers metals from the waste and produces electricity. The County collects and properly disposes of electronics, household hazardous waste and pharmaceuticals. We have an in-county state-of-the-art single stream recycling facility. In addition, there are transfer stations, several composting facilities, C & D debris recyclers, vehicle recyclers and scrap metals recyclers in-county.

The County also has some very successful recycling, reduction and reuse programs already in place. We are fortunate to have five colleges in the County with sustainability programs that can be used as models for other institutions. There are elementary and secondary school clubs and civic groups that promote recycling. The County and RRA staff regularly hear from residents and businesses that express interest in partnering to promote reduction and recycling efforts. The Implementation Schedule includes tasks that will initiate programs and partnerships in our efforts to increase county-wide reduction, reuse and recycling goals.

Chapter 4: Existing Administrative and Financial Structures

Administrative and Legislative Structure:

The County is the Planning Unit for the Dutchess County Local Solid Waste Management Plan. The Dutchess County Division of Solid Waste Management, within the Department of Planning and Development, oversees the management of solid waste under the direction of the Deputy Commissioner of Solid Waste Management (Deputy Commissioner). The responsibility of the Deputy Commissioner is to effectuate the intent of the Dutchess County Charter, Code and all laws, rules and regulations insofar as the management of solid waste is concerned. The Deputy Commissioner reports to the County Executive and County Legislature.

The Deputy Commissioner is responsible for the formulation and implementation of a workable program for the collection and sanitary disposal of solid waste in the County. Local Law No. 1 of 1984, providing for the management of solid waste generated within the County, and Local Law No. 4 of 1990 and Local Law No. 3 of 2014, providing for the mandatory collection and disposition of recyclables, outlines the responsibilities of the Deputy Commissioner. See Appendix C; for current regulations.

The Division has a Recycling Educator for recycling outreach and education, and Compliance Inspector for enforcement, as direct support staff to the Deputy Commissioner. The Division staff is responsible for operations, administration, finance, outreach, education, enforcement, data collection and evaluation of solid waste management, LSWMP updates and reports, and oversight of the Resource Recovery Agency (RRA).

While the staff for the management of solid waste program is small, it has been very effective in implementing all the tasks in the last Plan. One very effective strength used in the solid waste program has been to work with DEC, residents, municipalities, businesses, not-for-profits and regional solid waste groups in addressing local and regional solid waste concerns, recycling promotion, education and initiatives. Collaboration and cooperation with others have strengthened the program.

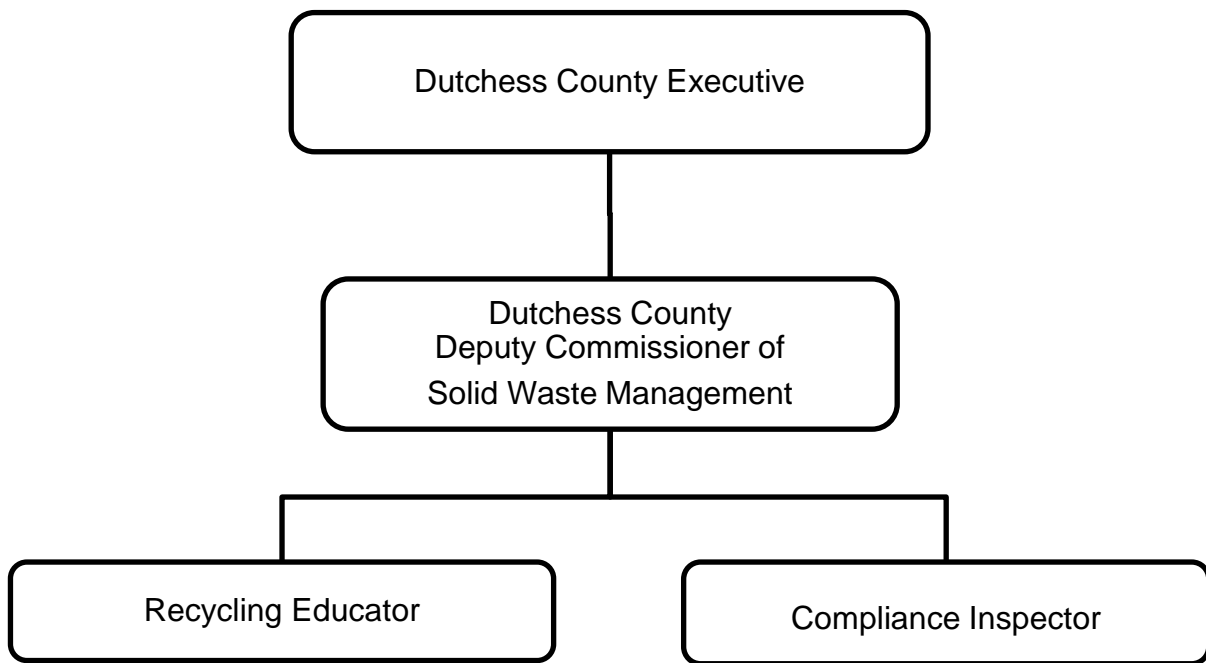
The weakness of the program is the makeup of the County solid waste management collection system. Recycling goes to at least two different materials recovery facilities with two different systems and different acceptable items. This causes some confusion and makes educational efforts more difficult, although this is addressed in all our educational materials. The County does not do any solid waste collection and private haulers do all collection. This causes a potential problem to do any county-wide initiatives, such as curbside food waste collection. This weakness would have to be overcome should any such initiatives ever happen.

The RRA is responsible for the financing, construction and operation of the Resource Recovery Facility (RRF), and the coordination of city, town and village waste services within the overall integrated system. Since the RRF was opened in 1989, the operation of the RRF is through contract (Service Agreement) between the RRA and a private

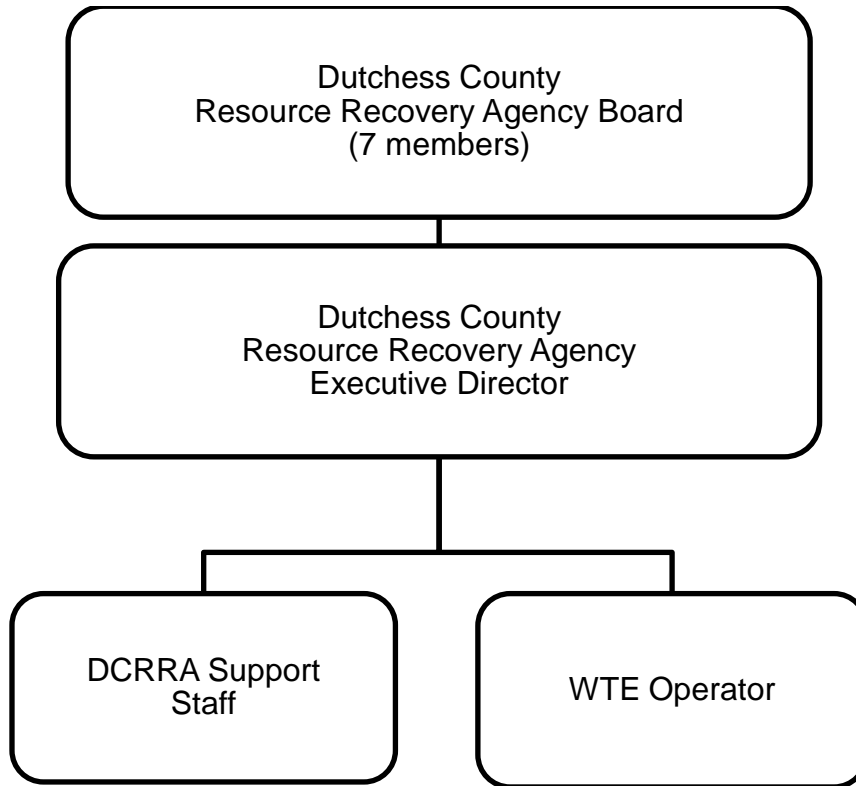
entity, currently WIN Waste Innovations (Operator). The RRA establishes and collects fees for use of RRA facilities, and these fees provide the primary revenue source for operation of the public solid waste system. The County, by agreement with the RRA, is responsible for appropriation of supplemental funding (Net Service Fee), as needed, to support the solid waste system. The full responsibilities of the RRA can be found under [New York Code, Title 13-D Dutchess County Resource Recovery Agency](#).

Dutchess County Division of Solid Waste Management Organizational Structure

As of January 2022



Dutchess County Resource Recovery Agency Organizational Structure



The County and the RRA work collaboratively to logically achieve our solid waste goals through inclusiveness and fairness, creating economic benefit for county taxpayers, reducing or eliminating the Net Service Fee and enhancing residents' overall quality of life.

Financial Structure:

Waste-to-energy facility:

The financial structure of the Resource Recovery Agency pursuant to its authorizing statute, bond indenture agreements, service agreement¹ and agreements with the County², is obligated to pay:

- debt service obligations to bond holders;
- operating expenses for the RRF; and
- all other RRA costs.

¹ Resource Recovery Facility Service Agreement of (Service Agreement), with the operator of the Facility (Operator).

² The Solid Waste Disposal Service Agreement of 1984, with amendments, with the County of Dutchess

Payment is made through the collection of tipping fees for use of the facility, together with revenues gained from the sale of energy, recyclable materials, or other sources. The County is responsible for any shortfalls when the RRA's revenues do not meet expenses. The County is obligated to pay this *Net Service Fee* for the RRF. The County is also obligated to provide a minimum of 140,000 tons of waste to the RRF.

Expenses

Costs for the operation of the RRF consist of three (3) major components:

- a service fee to the Operator;
- bond payments; and
- residue disposal.

Service Fee: The service fee is the set fee paid to the operator for each ton of municipal solid waste (MSW) processed. The revenue from tipping fees varies depending on market forces and how much waste is brought to the facility. The fees are an expense for the RRA to the Operator, and a source of revenue to the RRA, as outlined below in the revenue section. In order to attract locally-generated waste, the RRA must set its disposal fees at a competitive level within the larger solid waste marketplace, while keeping a margin of profit and attracting waste to the facility. The RRA, in order to help meet the 140,000 ton guaranteed minimum to the operator, offers a reduced tipping fee to haulers that can guarantee a set amount of waste to be delivered to the facility.

The split on the fee with the RRF Operator (Service Fee) is specified in the July 2014 Service Agreement. The Agreement sets the calculation for the payment of the Service Fee for the 140,000 ton minimum. The Service Fee started at a base fee of \$68.25 per ton in 2014, and as stated in the Agreement, is adjusted annually based on a formula using statistics of the U.S. Department of Labor, Bureau of Labor Statistics. Once the 140,000 tons is met, the RRA receives a \$25.00 per ton additional credit for all tonnage over the guarantee. The Operator also receives \$0.83 per ton, annually adjusted, for a Turbine/Generator Operations and Maintenance fund and 25% of the electric and metals revenue.

The current Service Agreement with Wheelabrator (now WIN Waste Innovations) will expire at the end of 2027. The agreement allows for numerous extensions.

Bond payments: The RRF was financed by the sale, in 1984, of \$40 million in revenue bonds of the RRA (the "1984 Bonds"), plus a grant contribution by the State of New York of \$13,449,000 in Environmental Quality Bond Act funds. Due to the default by the original Operator (PRS) under the Construction Agreement, Amendment No. 1 to the Solid Waste Disposal Agreement issued Solid Waste Management System Revenue Bonds, known as the "1990 Bonds" to redeem the 1984 Bonds. The 1990 Bonds were retired January 2014.

In 2007, due to capital improvements to the RRF to comply with the Clean Air Act, revenue bonds were issued, the "Series 2007 Bonds." In 2017 the bonds were refinanced for a savings of over \$1,000,000 over the life of the bonds. The Series 2017

Bonds go through 2027. The RRA's debt service obligations are approximately \$1,550,000 per year from 2021 through 2027.

Residue disposal: The RRF produces approximately 50,000 tons of ash residue annually from the combustion of approximately 150,000 tons of MSW. Under the Service Agreement, the RRA and Operator share the cost of ash disposal up to 32% by weight of total processed tonnage. Ash generated over 32% is paid for fully by the Operator. Total ash transportation and disposal costs are approximately \$3.0 million annually.

One hundred percent of the ash residue is used as an alternative daily cover under Beneficial Use Determinations (BUDs, granted by the New York State Department of Environmental Conservation) at various landfills in NY State. The cost of disposal of ash residue from the RRF includes disposal fees and transportation costs. The landfill accepts the ash from the RRF under BUD, which allows the ash to be used as alternate daily cover (ADC) material and the landfill facility does not count the material towards the landfills disposal permit limits.

In addition, the landfill can save valuable space by using an ADC such as ash residue. Regulations mandate that landfills use daily cover to overlay deposited waste. If earthen material is used, six inches of cover must be added at the end of each operating day, taking up space that could have been used for waste disposal. Using an ADC does not require six inches of material, thereby extending the life of the landfill.

Revenue:

The sources of revenue to the RRA are:

- tipping fees charged to users of the RRF;
- sale of electric power generated at the RRF to Central Hudson;
- sale of metals recovered from the RRF, and;
- Net Service Fee provided by the County.

Tipping fees: As stated above, tipping fees are a cost to the RRA as well as a revenue source. All tipping fees charged to the hauler are split between the Operator (Service Fee) and the RRA. The revenue from these fees varies from month to month.

Electric sales: After tipping fees, the second major source of revenue for the RRF comes from the sale of electricity to Central Hudson Gas & Electric. The RRA sells electric power to Central Hudson under a long-term contract that guarantees a floor price of \$0.06 per KWh, plus additional payments reflecting the avoided cost to Central Hudson if it had to purchase an equal amount of power from another independent power producer. Assuming an average annual energy production of 48.3 million KWh for export to Central Hudson, the RRA could expect to receive \$2.9 million in electric revenue annually based on the \$0.06/KWh floor price. Actual revenue from the sale of electric energy is approximately \$2.5 million annually, and as stated above, revenue is shared with the Operator. As with the tipping fees, the revenue to the RRA from the sale of electricity varies, depending on the amount of waste incinerated, downtime of the facility and in-house use.

Metals: The sale of metals recovered from the RRF is currently another source of revenue. This is again based on market prices for metals, which vary month to month. Fluctuations in market prices make this another uncertain revenue stream. The ash handling system at the RRF recovers 5,000 to 8,500 tons of ferrous metal from the ash annually, representing 30-33% of the ash stream by weight. As stated above, revenue is shared with the Operator.

Net Service Fee: The last source of revenue for the RRA is the Net Service Fee (NSF), which also fluctuates based on the revenue stream of the first three sources. When determining the amount of the expected NSF, the RRA must look at the worst-case scenario, as all other sources of revenue can vary so much. The actual NSF reached a high of \$4.9 million in 2009, but has ranged between \$1.2 million and \$4 million in other years. Since 2015 there has not been a net service fee. The RRA has been self-sustaining and expects this to continue into the near future.

Expenses	Revenues
Per ton of processed MSW tipping fee share to Operator Electricity sales share to Operator Metal residuals sales share to Operator Bond payments Cost of ash residue disposal	Per ton of processed MSW tipping fees share Electricity sales share Sale of metal residuals share Net Service Fee from County (if needed)

Dutchess County Division of Solid Waste:

Expenses:

The Division is funded by the County of Dutchess. The primary expense is personnel costs for a staff of three (3). The Recycling Educator position costs are partially reimbursed through a DEC grant program. Since 2012, DEC has reimbursed the County over \$249,000 for recycling education and promotion costs.

Another significant cost is the Household Hazardous Waste and Electronics collection program. Prior to 2016, the RRA held and funded the events. Since 2016 the County has hosted the events. These costs have increased significantly over the years and is currently approximately \$90,000 per year. The costs of the program are partially funded by the New York State Department of Environmental Conservation grants and since 2016 over \$58,000 has been reimbursed to the County for HHW expenses and over \$13,000 for electronics collection expenses. DEC no longer has an electronics collection reimbursement program but has continued the HHW program.

As stated previously, the County has an agreement with the RRA for a Net Service Fee. From 1995 (the end of flow control in the County) through 2014, the County paid over \$44,000,000 in Net Service Fees. Since 2015 there have been no net service fees.

Revenues:

Besides the DEC grant programs mentioned above, the County receives revenues through hauler licensing. Fees are collected every two years for licenses. The fee schedule is based on the number of vehicles the hauler has. Minimal revenue is realized from fines to unlicensed haulers. Most haulers that are warned about being fined if they continue to do solid waste business without a license, choose to get licensed. There are no revenues realized for fees collected for background investigations (for new haulers), as this is a pass-through cost to the contracted investigative firm. Revenues are not realized from the sale of compost bins, as they are sold at cost.

Laws, regulations, or ordinances, and policies:

Local Law No. 1 of 1984 was adopted when the County was implementing flow control for solid wastes. It was amended in 2000 to include background investigations to discourage or prevent the infiltration of solid waste hauling industry by undesirable or possible criminal elements. In 1984 flow control was in effect. This is the regulatory ability to direct wastes to be delivered to local publicly owned facilities, and private haulers must comply with this directive. In 1994, a court case known as the *Carbone* decision, ruled that flow control in the Town of Clarkstown, New York was unconstitutional. In response many municipalities chose to no longer enforce their flow control laws, as did Dutchess County. This action eliminated the ability to direct solid waste to the RRF. Dutchess County has not, to date, re-implemented flow control.

Local Law No. 4 of 1990 was adopted, which regulates the separation of recyclable material from solid waste. In 2014 Local Law No. 3 was adopted to address both recycling and hauler licensing. Local Law No. 3 is enforced for the County by Division staff. Unlicensed haulers incurring a fine are provided the opportunity to be heard by the County Attorney's office.

The County is a Climate Smart Community (CSC) with a Bronze Certification. CSC is a New York State program that helps local governments take action to reduce greenhouse gas emissions and adapt to a changing climate. Four (4) of the actions completed for Bronze certification are solid waste related. More actions will be completed in the near future for Silver Certification, including additional solid waste related initiatives.

As mentioned above, the County is proactive in efforts to reduce waste in the enactment of laws regarding both a single-use plastics and polystyrene bans. We support State product stewardship legislation, such as promoting motor oil recycling at local retailers. We look forward to working with the State and the PaintCare program to ensure the paint stewardship law is a success when started in 2022.

Chapter 5: Alternatives Evaluation and Selection



Single-use plastic prevention campaign logo. Design by Dutchess County Community College student.

Alternatives Assessment and Evaluation:

Waste reduction programs: The County has been proactive in waste reduction initiatives, with plastic bag and polystyrene bans, for example. Recently the Division took part in a single-use plastic reduction campaign. Our educational efforts include dedicated website pages addressing [reuse and reduce](#). Newsletters are issued every month, with several addressing waste reduction. The latest newsletter was titled “[Swap out Single-Use for Plastic Free July](#).” We will continue to support NYS initiatives for waste reduction and to look for ways to reduce the amount of waste disposed.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Select materials in the MSW stream will have lower volumes due to waste reduction programs.
- Types and Sizing of Facilities or Program: Does not require a permanent facility operated by the planning unit. Will require education and promotion programs.
- Summary of Cost Data for Evaluation: Some programs will result in a cost to residential waste generators through a fee added on to the purchase price of the product for recycling programs, such as the Bottle Bill program. Some costs could be on the generator of the wastes. All of these costs are beyond the control of the planning unit.
- Impact on Natural Resources Conservation, Energy Production and Employment: Waste reduction efforts will ultimately lead to natural resource conservation and reduced energy consumption as waste is reduced. The potential for job creation is minimal.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: All planning units are interested in waste reduction initiatives and cooperation between planning units is encouraged.
- Alternatives Available with Participation by Neighboring Planning Units: There is ongoing communication with solid waste staff in the Mid-Hudson region and regional initiatives are discussed and welcome.
- Recommendations from Neighboring Planning Units: Successful waste reduction initiatives in neighboring planning units can be a source of initiatives within our planning unit.
- Assessment of Environmental Justice Impacts: None expected.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: Waste reduction programs are supported to reduce the amount of solid waste disposed.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – Will reduce the amount of non-recyclable waste to be incinerated or landfilled.
 - Reuse – More materials will be collected for possible reuse, rather than disposal, such as leftover paint.
 - Materials recovery – Waste reduction programs will improve material recovery.
 - Participation in recovery opportunities – Improved participation among generators.
 - Product stewardship – Holding generators responsible for ultimate disposal or recovery is supported.
 - Economic, administrative or partnership benefits – Waste reduction efforts will reduce program costs.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: The existing planning unit structure is enough to support recommended waste reduction activities.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: Not required at this time. Should the County initiative further material bans, a local law will be adopted at that time.

Reuse programs: We promote the reuse of recyclable or reusable materials that cannot go in a homeowner's recycling bin. Materials such as [textiles](#), [home goods](#) and scrap metal can be recycled and/or reused, but like recyclables they have to be source separated by the generator. A newsletter addressing the [Alternatives to Landfills or Incineration](#) was published and our website lists products and materials that can be reused and/or donated for reuse.

The County is also fortunate in having several privately-run reuse centers and drop-off locations, including Salvation Army, Goodwill, USAgain, ReStore and Public Library used book donation outlets. Repair Café events are also held within the County. We keep current with what is available in our County and direct residents to these locations when appropriate.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Reuse programs reduce MSW waste volumes.
- Types and Sizing of Facilities or Program: Establishing a separate reuse program from existing outlets would require a facility that would vary in size depending on the types of materials collected. The planning unit recommends utilizing existing reuse programs and there is no need for an additional facility.
- Summary of Cost Data for Evaluation: Residential waste generators will not bear a cost as they would be diverting waste from the waste stream.
- Impact on Natural Resources Conservation, Energy Production and Employment: Reuse programs save natural resources and energy as less products are replaced with new ones through reuse programs. Additional job creation is not anticipated as reuse facilities already exist.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: A neighboring planning unit, Ulster County, has a reuse center at one of their transfer stations. We promote this center, especially for our northwestern communities. Existing reuse centers in the county are not limited to county residents.
- Alternatives Available with Participation by Neighboring Planning Units: Not applicable.
- Recommendations from Neighboring Planning Units: A tour of the Ulster County reuse facility was done and the facility is run well. This would be a good reuse facility to copy, should the planning unit decide to create one in the future.
- Assessment of Environmental Justice Impacts: None expected.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: Instead of establishing another reuse collection and distribution center, the planning unit recommends the continuation of educating residents on other local reuse programs such as the Salvation Army and other donation centers as a viable means to reusing certain products. The planning unit will continue to promote this education and offer information on how to reuse materials on an on-going basis.
- Expected Qualitative and Quantitative Impacts on:

- Waste reduction – Reuse programs reduce select waste volumes depending on the material targeted
 - Reuse – Reuse programs and continuing education/outreach will improve waste reuse for specific materials.
 - Materials recovery – Continued promotion of reuse programs will improve material recovery.
 - Participation in recovery opportunities – Promotion will improve participation.
 - Product stewardship – No impact.
 - Economic, administrative or partnership benefits – Reuse programs will reduce disposal costs of generators.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: The existing infrastructure in the planning unit is enough to support recommended waste reuse activities.
 - Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: Not required at this time.

Recyclables recovery programs for paper, metal, glass, plastic and textiles: County law requires source separation, collection and recycling of all these materials, except for textiles. We will continue to utilize the privately-run single stream facility, and for some communities, the Ulster County dual-stream facility which also accepts paper, metal, glass and plastic. We will continue to promote and provide education on recycling in the County for all materials accepted. The planning unit will continue to encourage residents to utilize local textile donation centers to remove textiles from the waste stream.

Like all other communities, Dutchess County recycling became harder to promote when haulers and transfer stations started charging for recyclable collection around 2018, when limited exportation of recycling caused a downturn. Due to this downturn, some materials are no longer accepted at the facility in Dutchess, such as CD plastic cases. The changes to materials acceptable to recycle were minimal. Dutchess County continued enforcement of our Law through the downturn, although our educational and promotional recycling materials had to be updated. Recycling seems to have rebounded and Dutchess Planning Unit continues to have a good recycling rate.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: The existing facilities are sufficient to take all recycling generated. Administrative impacts are the increased efforts to reduce single-stream contamination and educating residents on proper recycling depending on their location and where their recyclables are going.
- Types and Sizing of Facilities or Program: Existing facilities are sized to support collection and processing of curbside recyclables and textile donation.
- Summary of Cost Data for Evaluation: Residents pay for recycling through their hauler or transfer station fees. As recycling economics are making a comeback, it

is expected that fees will not increase during the planning period.

- Impact on Natural Resources Conservation, Energy Production and Employment: Recycling helps conserve natural resources. Energy production and additional job opportunities outside of the current operations are not expected.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: There are efforts to work with neighboring planning units on cohesive messaging about recycling programs. Different MRF's have different rules on acceptable materials, as stated before, the Ulster facility does not take all the materials the Dutchess facility does. Planning units must cooperate to keep recycling contamination to a minimum.
- Alternatives Available with Participation by Neighboring Planning Units: Planning units are currently working together. The privately-run MRF in Beacon accepts materials from several surrounding planning units. Some of the planning units' recyclables go to the Ulster facility. This is not expected to change during the planning period.
- Recommendations from Neighboring Planning Units: None at this time.
- Assessment of Environmental Justice Impacts: None expected.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: The current program works well and there are no plans for another facility or change in our program. Should Ulster County decide to not accept recycling from other planning units, the facility in Beacon has the capacity to accept all of our materials. Should the facility in Beacon close, we would have to export all of our materials to out-of-county facilities until a County facility was built, if needed. The current opportunities for textile recycling are sufficient.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – Recycling programs reduce waste that is landfilled or incinerated. Continuing our recycling program is necessary to reach our goal of not having to send any waste outside of the County to landfills.
 - Reuse – Promotion of reuse for textiles is ongoing and will continue.
 - Materials recovery – Continued successful recovery of recyclable and reusable materials, which will decrease the amount of materials for landfill and incineration.
 - Participation in recovery opportunities – The enforcement of our current laws ensures participation of all generators of recycling. The current enforcement program is sufficient.
 - Product stewardship – Some programs could decrease the amount of materials that are disposed or collected at the household hazardous waste events, such as paint.

- Economic, administrative or partnership benefits – Reducing contamination in recycling reduces the costs of recycling, benefiting both the generators and recycling facilities. Current staffing is sufficient for recycling education.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: The existing infrastructure in the planning unit is enough to support recommended recycling activities.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: New laws or regulations are not required at this time but will be reviewed in the upcoming years to stay consistent with current recycling markets.

Organics recovery programs for food scraps and yard trimmings: Currently there is one privately-run organics program for food scraps and yard trimmings in the County, McEnroe Farm. Some municipalities have drop-off sites for brush, leaves and yard trimmings or seasonal collection of leaves, but not for food scraps. The County would like to work with a consultant to determine if another food scrap and yard trimmings compost site would be viable in the western portion of the County, where many of the large generators are. An assessment of where and what kind of compost facility could be viable is needed. Any operation would require a zoning variance, along with a traffic study and an assessment of any potential negative impacts to the host community. The type of compost operation, in-vessel or aerated, can change the amount of nuisance odors and quantities of materials that could be accepted and varies greatly in the start-up costs. All alternatives would have to be studied and assessed as the first step in expanding organics collection.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Increasing organics recovery would make the biggest impact to waste reduction and recycling in the planning unit. Currently there are very limited opportunities available to residents for organic diversion, other than backyard composting. There are compost facilities both in-county and in neighboring planning units for commercial generators. Only the in-county facility accepts materials from residents. As stated previously, this facility is not easily accessible to many residents and organic haulers due to the location in the northwestern corner of the County. In addition, with the enactment of the NYS Food Donation and Food Scraps Recycling Law and the addition of commercial generators who were not previously diverting food scraps, it is uncertain at this time if the current facilities could handle all of the materials.
- Types and Sizing of Facilities or Program: The type and size of a new compost facility would have to be evaluated. The current and possible generation of compostable materials would have to be determined. This is in the implementation schedule.
- Summary of Cost Data for Evaluation: A report was done in 2017 by Cornell Cooperative Extension Dutchess County, through a NYSERDA grant, on

[Organics Recycling Study for Dutchess County](#). The report outlined various composting alternatives and costs. This would serve as the basis for determining next steps. The cost of different types of compost operations varies greatly and the type of facility also varies the impacts to the community hosting the compost facility. Further study of the type, size and most importantly, the possible location, of a facility needs to be done. This would require a cost to the planning unit to hire a qualified consultant to assist staff in the study.

- Impact on Natural Resources Conservation, Energy Production and Employment: Increased organics diversion helps conserve natural resources. Prevention of organic landfilling has a large impact on air quality. Some types of composting can increase energy production, so the impact would depend on the type chosen. Any type of composting facility would increase employment, as current staff is not sufficient to operate a new facility.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: Mid-Hudson planning units regularly meet and discussions have been held concerning a regional composting facility. Discussions will continue.
- Alternatives Available with Participation by Neighboring Planning Units: Currently County haulers use facilities in neighboring planning units.
- Recommendations from Neighboring Planning Units: Recommendations have been obtained from other counties, including Requests for Proposals for organic study consultants. Our planning unit has greatly benefited from the sharing of information.
- Assessment of Environmental Justice Impacts: If a composting facility is proposed, environmental justice impacts will be part of the considerations for siting a facility, as well as access to the facility.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: Until further study can be done, the type and size of a compost facility is unknown. We hope to complete the study within the 10-year planning period. We will continue to use current facilities available to the planning unit, as well as promoting backyard composting and selling backyard composters.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – Increasing organics diversion would have a large impact on the reduction of waste and our recycling rate.
 - Reuse – Promotion of food donations and gleaning from local farms for those in need will continue.
 - Materials recovery – Composting increases materials recovery through the production of a beneficial soil amendment and the recovery of food for donation.
 - Participation in recovery opportunities – Staff have participated in gleaning from farms for food donation and promotion. Staff will continue to provide education and help with small composting projects. Several schools have shown an interest in developing onsite composting.
 - Product stewardship – Not applicable.

- Economic, administrative or partnership benefits – If a compost facility is developed, possible economic benefits through tip fees and the sale of compost.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: If a facility were to be built, it would require contractual help, additional administrative staff for the facility and either a modest or very large financial outlay. Current activities do not require any changes to staff or finances.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: Current zoning in municipalities does not allow for compost operations, so a zoning variance or zoning amendment would be needed. There is no requirement for residents to source separate food scraps and it is unlikely this would happen during the planning period.

Programs to develop or improve local and regional markets for recyclables:

Dutchess County does not own or run a materials recovery facility, therefore we do not market recyclables. All marketing is done by the privately owned facility, Republic Services. The only sale of recycling is done by the RRA and only for recovered metals from the incineration process. Currently the RRA sells the metals to a local scrap metal recycler, chosen by a request for proposals. The sale price is based on a percentage formula of the monthly American Metals Market prices. The recycler then markets the metals to other buyers. There are no expected changes or alternatives to the current system.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Enforcement programs:

The County currently has an enforcement program with a full-time Compliance Inspector. The Inspector must have complete knowledge of New York State and County recycling laws, hauler licensing laws, and be pro-active in enforcement of the laws and responding to complaints of non-compliance. The current program works well and there are no plans to change our enforcement program.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Incentive-based pricing:

Incentive programs within a solid waste management system are programs used to promote or encourage specific actions by the community to increase the success of

programs the Planning Unit is trying to implement, mainly waste reduction and increased recycling. Pay-As-You-Throw (PAYT) is the most common incentive program.

In areas where Pay-As-You-Throw (PAYT) is an option for waste collection, residents are charged a fee for municipal solid waste collection based on the amount of waste they dispose of. According to the Environmental Protection Agency (EPA), this concept creates a direct economic incentive to recycle more and to generate less waste. PAYT programs allow residents to treat waste collection as a utility and pay only for the service they actually use. Most communities that use a PAYT program operate municipal hauling and charge their residents a fee per bag or per can of waste. In a small number of communities, residents are billed based on the weight of their trash. All of these variations on the PAYT programs allow residents to pay less for waste disposal if they recycle more and throw away less waste.

Another type of PAYT program allows customers to select the appropriate number or size of containers for their standard weekly disposal amount. The bag program allows customers to purchase bags, often printed with special logos for different haulers, and dispose of waste in these specially marked bags. The price of each bag incorporates the cost of collection, transportation and disposal of the waste. The more bags customers use the more they are paying for waste collection and vice versa. The tag and sticker program allows customers to purchase tags or stickers, which are often specially marked for different haulers, and place these tags or stickers on their garbage bags. This program is similar to the bag program, only using tags and stickers instead of specialty bags.

The County does not provide collection services, so it is up to private haulers, municipalities that provide collection, and transfer stations to initiate PAYT programs. One Village municipality that was providing residential collection, had a PAYT bag program for residents. When the revenue from bag purchases were not keeping up with the expenses of collection, the Village did a study and found that only about 25% of residents were using the bag system. Most were hiring private haulers, rather than have the “inconvenience” of purchasing bags. The Village ended collection services in 2013 and now relies on private haulers, hired by residents, for garbage and recycling.

Some municipalities run transfer stations and charge by the size of the bag of garbage, with no or reduced fee for recycling. The residents of these municipalities have the choice of using a private hauler or the transfer station. While a survey has not been recently done on transfer station usage, informal data suggests the majority of residents use private haulers and prefer scheduled and convenient pickup.

To initiate a PAYT system county-wide, it would need to be implemented through local haulers. They are not set-up for a PAYT system and all are using automated trucks and totes. The only option offered to incentivize waste reduction are “senior” pricing options. Smaller garbage and recycling containers are provided at a reduced price, at the request of the customer. There really is no incentive for private haulers to initiate incentive-based pricing. Transportation and staffing costs are the same to pick up one bag or many. Under the current system, they charge the same whether your tote is full or not. There are transfer stations that charge by bag and some by bag size, with most having a set annual user fee. This is not available to all residents of the County.

The only alternative would be for the County to take over all collection, which is not something we foresee happening within the ten-year Plan schedule.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Possible negative impacts in the form of increased waste littering. Potential positive impact due to financial incentives for waste reduction and increased recycling.
- Types and Sizing of Facilities or Program: Significant impacts to staffing and equipment needed for county-wide PAYT, including needing county transfer station capabilities.
- Summary of Cost Data for Evaluation: Significant. Staff, trucking, equipment and facilities costs.
- Impact on Natural Resources Conservation, Energy Production and Employment: A PAYT program has the potential to increase recycling (lower cost for recyclables) and waste reduction, conserving natural resources.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: None anticipated.
- Alternatives Available with Participation by Neighboring Planning Units: None known.
- Recommendations from Neighboring Planning Units: None.
- Assessment of Environmental Justice Impacts: A PAYT program would have to be county-wide, so there would be no impacts to individual areas.

Selected Alternatives and Program Identification: Not applicable. We do not anticipate initiating a PAYT program or other incentive-based pricing program within the planning period.

- Alternatives Chosen and Why: No viable alternative at this time.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – A program would potentially result in post-recycled waste reduction.
 - Reuse – None
 - Materials recovery – A program would potentially increase materials recovery, but would also potentially increase recycling contamination rates.
 - Participation in recovery opportunities – Potential increase.
 - Product stewardship – No impact.
 - Economic, administrative or partnership benefits – Administration of a county-wide system administration might be advantageous for recycling education efforts and potentially save residents money in disposal. This is not a given, as the costs to run a PAYT system may not result in administration savings.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: Additional administrative and financial requirement to support an incentive-based program would be significant.

- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: None anticipated.

Education and outreach:

The Planning Unit has a full-time Recycling Educator (RE) whose main function is to promote recycling, reuse and reduction. While this is a specified function for this position, the entire Solid Waste Division has the responsibility to perform education and outreach. The work is performed through in-person one-to-one education on a daily basis, and through events and presentations, website information, flyers, social media, and videos. The Planning Unit has increased our recycling rate since the last plan and continues to set our goals higher.

The County stays up-to-date with product stewardship initiatives, local programs for education, NYS laws and initiatives, as well as educational initiatives in surrounding counties. The RE adjusts to changing times and materials that can be recycled. The pandemic prevented in-person presentations, so remote presentations were given and videos were developed.

The County has taken full advantage of NYS DEC's grant program for Recycling Coordination and Education Projects and grant programs offered to promote recycling, such as the public space recycling bin grant we received in efforts to continue and expand our educational programs. The RE reaches out to surrounding counties to learn about new programs and initiatives for possible use in our County and regularly attends meetings, forums and webinars to stay informed of outreach opportunities. We do not anticipate needing alternatives for education and outreach, but plan to continue our current dedicated program and adjust to changing times as needed.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Data Collection and evaluation efforts:

As stated in Chapter 3, the Division collects recycling and post-recycling data for MSW, C&D debris and biosolids annually. Data is required of licensed haulers in order to keep or renew their license. Some of the data is requested on a voluntary basis and some data comes from NYS DEC annual reporting requirements. It is not a perfect system, as not all requests for data are submitted from voluntary reporting entities, but our efforts to obtain data are considerable. As new materials enter the waste stream within the County, such as the increase in breweries the last few years, efforts are made to obtain data for these materials.

Outreach to surrounding Planning Units has not resulted in any better data collection methods. Other alternatives to mandatory and voluntary survey collection data are unknown at this time.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Local hauler licensing programs, including an assessment of laws preventing commingling of recyclables with waste:

As stated in Chapter 3, the County has a local hauler licensing and source separation law. In order to maintain a Hauler License, the hauler must not commingle recyclables with waste and must dispose of recycling at a recycling facility. It is the Compliance Inspector's job to ensure our law is followed and has the ability to issue warning notices and fines for non-compliance. The increase over the past 10 years in the number of licensed haulers and the increasing recycling rate is proof that the current program is working. While there have been \$2400 in fines issued to unlicensed haulers, the result of most warning notices concerning compliance issues is to comply. Complaints of non-recycling opportunities have resulted in the entity providing recycling. Haulers found without a license, obtain a license. The goal is to have recycling and licensing compliance, not to fine residents or businesses. There are no plans to find an alternative method to ensure compliance or to change our laws, as the current system works very well.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Flow control and districting potential:

Flow control, in short, gives a municipality the ability to direct solid waste and/or recyclables to designated facilities within the municipality. This method gives the municipality the ability to know how much MSW is generated within the Planning Unit and set tipping fee rates at a level that supports their solid waste system. Dutchess County used flow control to direct MSW to the waste-to-energy facility from its opening in 1989 until 1994. In 1994 a legal challenge to flow control was initiated in the Town of Clarkstown and the Supreme Court struck down the Clarkstown flow control law. Due to the lawsuit, many municipalities, including Dutchess County, chose not to enforce their flow control laws. Without flow control and the ability to direct waste, in 1995 the tipping fees at the Dutchess County waste-to-energy facility went from \$88 per ton to \$68 per ton, causing the need for a Net Service Fee (NSF) from the County. Rates remained low in order to keep waste coming to the facility and the need for a NSF continued through 2015.

Following a protracted legal battle, in 2007 the Supreme Court affirmed the power of local government to direct the flow of solid waste and recyclables to public facilities. Following this decision, several surrounding counties, including Ulster and Rockland, reinstituted flow control. Dutchess County has, several times since 1994, considered reinstituting flow control and/or solid waste districts. As recently as 2014 a consultant was hired and a committee formed to study the need and possibility of reimplementing flow control or other solid waste system alternatives. No action was taken at that time.

Through a Put or Pay agreement with a local hauler and annual increases to the tipping fees since 2016, the RRA and County have been able to provide MSW to the waste-to-energy facility without a NSF and without flow control. The 2021 tipping fee gate rate for the facility, for the first time in 27 years, is above the 1994 rate. Currently there are no plans to reinstitute flow control.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: The waste stream would remain the same. A more accurate waste stream generation rate could be determined.
- Types and Sizing of Facilities or Program: The waste-to-energy facility cannot accept all waste generated within the County, due to NYS DEC permit and facility size limitations. The current system could not support flow control, without creating a refuse district or creating a public transfer station(s).
- Summary of Cost Data for Evaluation: If creating a refuse district the cost would be for legal advisor fees. Flow control would require, at the least, creation of one public transfer station, either by purchasing an existing station or building a new one.
- Impact on Natural Resources Conservation, Energy Production and Employment: No significant impacts.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: Neighboring planning units cannot participate in flow control within a municipality.
- Alternatives Available with Participation by Neighboring Planning Units: None.
- Recommendations from Neighboring Planning Units: Recommendations from neighboring Planning Units would be sought and helpful.
- Assessment of Environmental Justice Impacts: Environmental justice impacts would have to be considered with either flow control, with the siting of a transfer station, or deciding on what municipalities within the County would be included in a refuse district.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: There are currently no plans to select an alternative system, as the current system works. Flow control would be the preferred method if a change were considered.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – None.
 - Reuse – None.
 - Materials recovery – None.
 - Participation in recovery opportunities – None.
 - Product stewardship – None.
 - Economic, administrative or partnership benefits – Flow control would enable the Planning Unit to set tipping fees at a level that supports the solid waste system, without the need to negotiate a put or pay agreement. This would create a more stable and predictable revenue. Partnerships

would be created to transport and dispose MSW that exceeds the annual limit allowed to be processed at the waste-to-energy facility.

- Identification of Administrative, Contractual, and Financial Requirements for Implementation: Flow control reimplementation would require Legislative approval, contractual agreements with alternative disposal sites and financial commitments for additional disposal sites.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: Local Law No. 1 of 1984 would need to be updated.

C&D debris reduction, including deconstruction, reuse and recovery programs:

There are currently no separation requirements/regulations for C&D debris in Dutchess County.

Working with municipalities on requiring a materials management plan when issuing a building permit, would help to bring awareness to the benefits of properly handling C&D debris materials, as well as other building materials such as wood, metal and yard waste. Identifying which municipalities already require this, if any, is the first step. For municipalities that do not currently have any requirements there are good examples from other counties to model after, such as the Orange County Solid Waste Management Recyclable Material Permit Application. The County Department of Public Works could also require C&D debris source separation when issuing requests for bids/proposals for construction and demolition projects.

Education is needed to keep C&D debris materials out of the waste stream, which we are currently doing. As discussed previously, there are many facilities in-county and in nearby counties that provide opportunities for C&D debris recycling and reuse, and the tipping fees at these facilities are generally less than landfill fees. Transportation costs are lower also, as they are closer than any C&D debris landfill. A regulated recycling and reuse program would boost current C&D debris recycling rates.

C&D debris not recycled or reused could end up at the waste-to-energy facility. Loads that can be identified as containing C&D debris are turned away, but incidental debris is hard to control. Landfilling is the other option, to either be buried or used as alternate daily cover. Recycling and reuse is the preferential option. It is extremely important that residents and businesses know how and where to recycle or dispose of these materials properly.

The Planning Unit already has the facilities needed for C&D debris recycling and reuse and provides education on [deconstruction](#). The alternative would be to mandate C&D debris recovery, through municipal and county regulations.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Program would result in increased diversion of C&D debris from the waste-to-energy facility and landfills.
- Types and Sizing of Facilities or Program: The existing facilities are adequate for expansion of C&D debris recycling and reuse.

- Summary of Cost Data for Evaluation: No significant cost to evaluation of enacting the alternative program. Costs to haulers/contractors could be significant and would have to be considered in any evaluation. Separating the debris will require additional staging areas for separate containers and additional labor, increasing costs, and in turn extending the duration of construction.
- Impact on Natural Resources Conservation, Energy Production and Employment: Conservation of natural resources would be realized through the reuse of natural materials.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: The resources of neighboring planning units are already being used. Enacting a regulation would not prohibit using facilities outside the planning unit or other planning units using facilities in Dutchess County.
- Alternatives Available with Participation by Neighboring Planning Units: Activities associated with this program are not dependent on the participation of neighboring planning units.
- Recommendations from Neighboring Planning Units: Recommendations from neighboring Planning Units would be sought and helpful.
- Assessment of Environmental Justice Impacts: No known impact.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: A source separation regulation for C&D debris would be the only viable next step in increasing recycling and reuse for these materials. An evaluation of the feasibility of regulating such a program and determining if the costs to the planning unit, haulers and contractors is worth the unknown, possibly insignificant, increase in recycling and reuse. The current system results in high diversion rates, so the additional costs would need to be fully evaluated before possibly initiating any alternative program.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – Reduction in C&D debris materials being landfilled.
 - Reuse – C&D debris recovery significantly increases reuse opportunities.
 - Materials recovery – Expected increase in recovery.
 - Participation in recovery opportunities – It would be a regulatory requirement, therefore participation would increase.
 - Product stewardship – None expected.
 - Economic, administrative or partnership benefits – The benefits are increasing diversion and reuse, but there would be additional administrative costs and additional costs to partners, such as municipalities, haulers and contractors.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: Some potential drawbacks to the enactment of such an ordinance, were the County and/or municipalities to entertain this action, are an increase in the staff time and costs to develop a diversion program and to monitor and enforce C&D debris separation. It is estimated that, due to the financial benefits of diverting materials where recycling outlets and project constraints allow, a majority of contractors are already implementing this

practice. Enforcement by the County and/or municipality would only result in forcing contractors to divert more cost intensive materials for which local recycling outlets likely do not exist, increasing construction costs and/or making it impossible for contractors to comply.

- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: This would require a new ordinance or regulation be adopted for implementation.

Private sector management and coordination opportunities:

Utilizing the private sector to manage and coordinate solid waste and recycling can be used as a cost-saving measure for government entities. The County utilizes the private sector in nearly all facets of its solid waste program, including solid waste, recycling, electronic recycling, and household hazardous waste. The County is always open to partnerships and coordination with the private sector to expand its current programs and create new programs.

In addition, the coordination with the private sector, the County also coordinates with other municipalities, other counties, environmental entities such as Cornell Cooperative Extension Dutchess County, the Environmental Management Council, municipal Conservation Advisory Committees and other non-profits.

The County feels its efforts under this section are extensive and therefore alternatives do not apply at this time.

Administrative/Technical Impacts: Not applicable.

Jurisdictional Impacts: Not applicable.

Selected Alternatives and Program Identification: Not applicable.

Management of waste through thermal treatment technologies:

Thermal Treatment Technologies involve high temperatures in the processing of the waste feedstock. Frequently, this involves the combustion of waste materials. For the past 32 years Dutchess County has relied on our waste-to-energy facility to dispose of over 70% of our post-recycled waste. The remainder is landfilled out-of-county. There are no plans to change this method within the planning period. It is recognized that the facility will not last forever and looking at future disposal options will be started within the planning period. The following options will be reviewed, studied and assessed during the planning period. Currently, landfilling all our waste is not an option to be considered.

Waste-to-Energy (Combustion/Incineration)

A waste-to-energy (WTE) facility is a solid waste management facility that combusts wastes to generate steam or electricity and reduce the volume of MSW requiring disposal by 80-90 percent. These facilities are sometimes referred to as resource recovery facilities or Municipal Waste Combustors (MWC). Newer technology allows higher efficiency heat recovery from the combustors, increasing energy production

potential. Although the total volume of MSW requiring disposal is reduced, a secondary disposal method such as landfilling is required for the ash.

Pyrolysis/Gasification

Pyrolysis systems use a vessel which is heated to temperatures of 750°F to 1,650°F, in the absence or near absence of free oxygen. The temperature, pressure, reaction rates, and internal heat transfer rates are used to control pyrolytic reactions in order to produce specific synthetic gas (syngas) products. These syngas products are composed primarily of hydrogen (H₂), carbon monoxide (CO), carbon dioxide (CO₂), and methane (CH₄). The syngas can be utilized in boilers, gas turbines, or internal combustion engines to generate electricity, or alternatively can be used in the production of chemicals. Some of the volatile components of MSW form tar and oil, and can be removed for reuse as a fuel. The balance of the organic materials that are not volatile, or liquid that is left as a char material, can be further processed or used for its adsorption properties (activated carbon). Inorganic materials form a bottom ash that requires disposal, although it is reported that some pyrolysis ash can be used for manufacturing brick materials. Under typical operations, the ash is landfilled.

Gasification is a similar process to pyrolysis, but which requires the partial oxidation of a feedstock to generate syngas. Oxygen must be provided for the reaction, but at a quantity less than is required for complete combustion. The primary syngas products are H₂ and CO with smaller quantities of CH₄ produced at lower temperatures. Similar to pyrolysis, the syngas product may be used for heating, electricity generation, fuel, fertilizers or chemical products, or in fuel cells. Byproduct residues such as slag and ash are produced and require disposal in a landfill.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: No impacts.
- Types and Sizing of Facilities or Program: The type of facility would have to be researched. The size of the facility would depend on the current post-recycled generation rate. Ideally the facility would be sized to handle all of the MSW generated.
- Summary of Cost Data for Evaluation: All of these technologies require upwards of a \$10 million dollar investment.
- Impact on Natural Resources Conservation, Energy Production and Employment: Alternatives mentioned above would be sized to save landfill space, create electricity and provide technology specific employment.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: Unknown. Neighboring planning units rely mainly on landfilling. There may be interest in siting, sizing and financing a facility that could service more than one planning unit.
- Alternatives Available with Participation by Neighboring Planning Units: None exist currently as they rely on landfilling, with the exception of Westchester County. The Westchester waste-to-energy facility is not sized to handle all of our MSW disposal needs, so it is not an alternative option.
- Recommendations from Neighboring Planning Units: Recommendations from neighboring Planning Units would be sought and helpful.

- Assessment of Environmental Justice Impacts: None if the current site of the waste-to-energy facility is used. Impacts at other sites would be assessed.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: Any alternative chosen would allow Dutchess County to limit or eliminate disposal outside of our planning unit, minimize residue disposal and provide the best environmental and economic benefits to our residents available.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – Waste-to-energy reduces waste by about 87%. Newer technologies increase reduction. This will be a consideration when looking at what is next for the planning unit.
 - Reuse – This depends on the technology used. The planning unit is open to new technologies that are striving to reuse all residue from the waste disposal process. This will be carefully reviewed when the time comes.
 - Materials recovery – Currently our waste-to-energy facility recovers ferrous metals from the residue. We will continue to look at proposed technology that can recovery all metals and reuse all residue.
 - Participation in recovery opportunities – Any technology chosen would hopefully increase recovery opportunities and decrease residue disposal.
 - Product stewardship – No impact.
 - Economic, administrative or partnership benefits – Any technology chosen would require a full economic analysis to determine if the method is economically viable. There would be an administrative requirement for any method and possible partnerships with a private company(s), the RRA and/or the County.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: Any alternative method chosen would require administrative and contractual oversight. The financial requirement would include bonding and/or a private partnership.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: None known.

Waste disposal options:

For Dutchess County the priority option for disposal of waste that has not been diverted has not changed in over thirty years, the waste-to-energy facility. An annual inspection is done every year to determine the state of the RRF. The last inspection was done October 2020. In the consulting engineer's report prepared by the RRA's engineer, D&B Engineers and Architects, P.C. (D&B), found that the RRF was in good operating condition with no major operating deficiencies identified. D&B concluded that the useful life of the RRF can be expected to exceed the term of the 2017 Bonds (2027) if operated and maintained in accordance with the Service Agreement and accepted industry practice.

MSW that is not disposed of at the RRF is ultimately brought to out-of-county landfills. The landfills provide the disposal capacity necessary for all non-recyclable waste that cannot be processed by the RRF. It is anticipated that adequate capacity for current

quantities of Dutchess County waste at such facilities will remain available for the planning period.

Should the RRF become non-functioning during the planning period, the alternative would be to use out-of-county landfills and the Westchester Wheelabrator facility. This would be a short-term alternative until a disposal alternative, as discussed in the management of waste section above, is determined and built.

There are no plans during the planning period covered in this document, to develop a local MSW landfill or to expand the RRF to accept additional MSW.

Other wastes, such as construction and demolition debris (C & D) and industrial waste, go to both in-county and out-of-county facilities. This is expected to continue, with new facilities being driven by private enterprise. The existing facilities within the County, such as Recycle Depot and Royal Carting, are well established and successful facilities.

In the immediate future, the RRA will continue to contract with haulers and landfills for ash residue disposal. At the same time, the County and RRA will actively advocate for alternative uses for ash residue. There is ongoing research looking at alternative uses, as this is a significant cost to all waste-to-energy facility operators. The work of entities such as the University Ash Consortium and the Waste-to-Energy Research and Technology Council (WTER) will be followed closely, in an effort to work with the NYS DEC in approving alternative uses.

The transfer station system works well within the County. Visits to the municipal transfer stations revealed well-run systems. They all accept recyclables and most encourage diversion by not charging for recyclables when dropped off, other than the yearly permit fee.

As discussed above, waste-to-energy use for the majority of post-recycled MSW will continue to be used, with limited use of out-of-county waste-to-energy facilities and landfills. The alternative, should a catastrophic event happen to the RRF during the planning period, would be the use of other facilities, on a temporary basis. The effects of a landfill alternative on the planning unit is outlined below.

Administrative/Technical Impacts:

- Quantitative/Qualitative Impacts on Waste Stream: Waste stream would not change.
- Types and Sizing of Facilities or Program: Facilities outside of the county would be used. Facilities used would depend on their capacity.
- Summary of Cost Data for Evaluation: An increase in costs for haulers to transfer and transport MSW to landfills would be expected. Therefore, an increase to the costs for residents would be expected.
- Impact on Natural Resources Conservation, Energy Production and Employment: Large impact on natural resources conservation due to the distance to transport and the associated emissions and the emissions from landfills. Energy production would decrease significantly. Employment would be lost at the RRF and employment gained for tractor-trailer drivers going to landfills.

Jurisdictional Impacts:

- Interest in Participation by Neighboring Planning Units: Potential participation in landfill contracts and transportation contracts.
- Alternatives Available with Participation by Neighboring Planning Units: A limited amount of MSW may be sent to the neighboring waste-to-energy facility, but this would be an insignificant amount. There are no landfills in neighboring jurisdictions.
- Recommendations from Neighboring Planning Units: Recommendations from neighboring Planning Units would be sought and helpful.
- Assessment of Environmental Justice Impacts: None anticipated.

Selected Alternatives and Program Identification:

- Alternatives Chosen and Why: Landfilling is the only short-term alternative if the RRF were not available long-term.
- Expected Qualitative and Quantitative Impacts on:
 - Waste reduction – None.
 - Reuse – None.
 - Materials recovery – Ferrous metals would no longer be recovered from the MSW going to a landfill. There would be a large impact to recycling.
 - Participation in recovery opportunities – None.
 - Product stewardship – None.
 - Economic, administrative or partnership benefits – No benefits to landfilling.
- Identification of Administrative, Contractual, and Financial Requirements for Implementation: Would require contractual agreements with landfills and a financial input by haulers for additional tractor-trailers for transport. May also require DEC approvals to increase waste storage limits at transfer stations.
- Identification of New or Modified Local Laws, Ordinances, or Regulations Required for Implementation: None.

Chapter 6: Implementation Plan and Schedule

The Dutchess County Local Solid Waste Management Plan is meant to be a working document, with a realistic plan for solid waste management. In order to accomplish the tasks outlined in previous chapters and to reach the target goals listed on the Projections worksheet, a work program is needed.

The detailed work program is found in Appendix D; Table 1, Implementation Schedule. As with any implementation plan, it is expected that most tasks will be completed, some will not, some may be modified, and other tasks will be added. The same holds true for the timing of the tasks. Some will be completed on time, some may not start as scheduled, and some may take longer than anticipated.

Implementation plans change due to new technology, new ideas, new or lost funding opportunities and/or time constraints. It is the County's intent to follow the schedule as closely as possible, allowing for flexibility as new tasks develop and technologies change. The County will update the implementation plan as necessary and appropriate when submitting the biennial compliance reports to NYS DEC.

Chapter 7: Projections

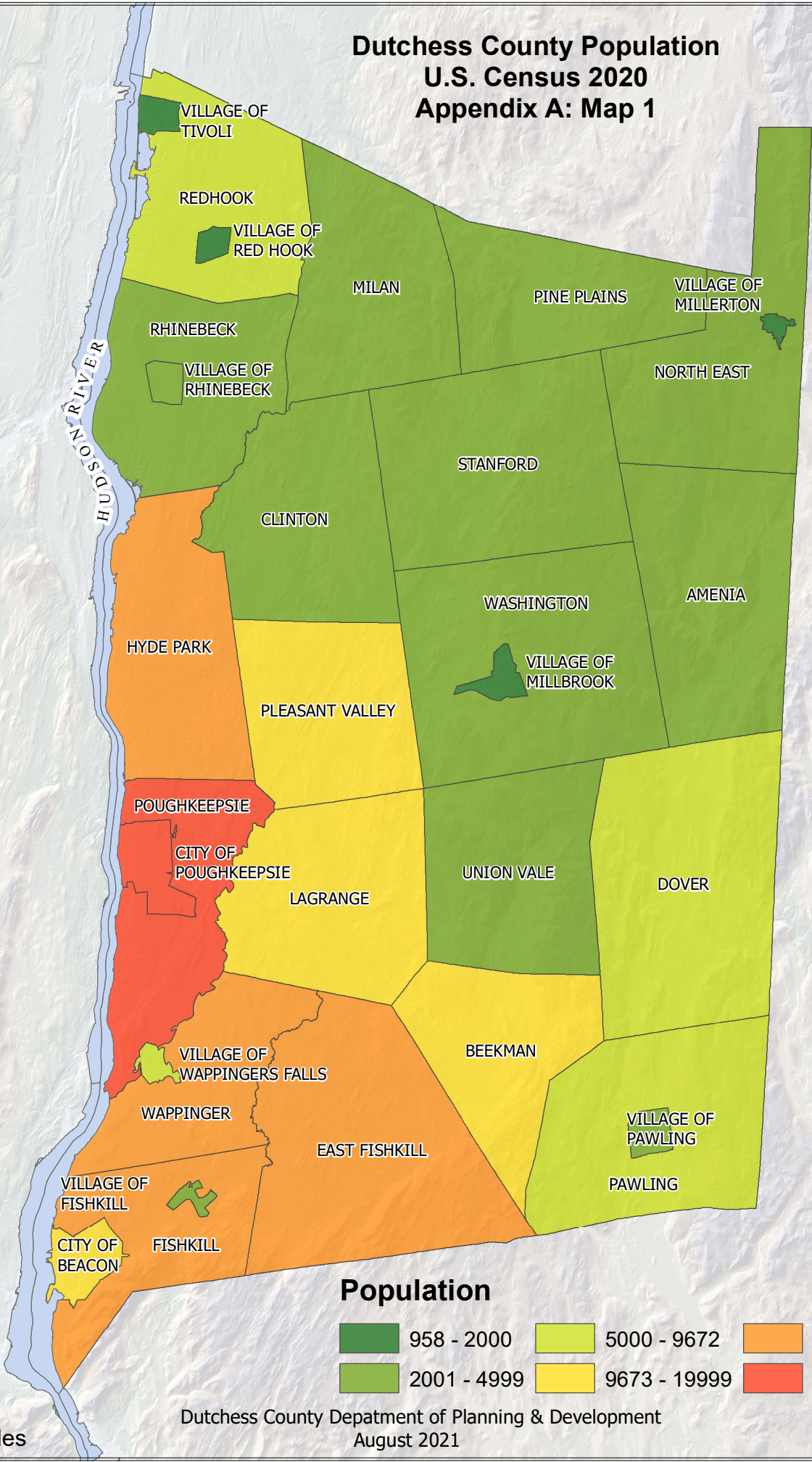
The County recognizes that recycling and diversion rates need to steadily increase and has set, what we hope, are realistic goals in terms of reduction, reuse and recycling. The projections can be found in Appendix B, Table 4. As with all projections, the actual results will depend on the success of efforts to increase recycling, to divert organics out of the waste stream and to reduce the amount of waste generated. Progress in achieving the projections will be reviewed every year, as will the implementation plan. It will be an on-going process that will be updated and adjusted as needed, including compliance with the required review by NYS DEC every two years.

Appendix A

Appendix A: Table 1**1990-2000-2010-2020 Population by Municipality****Dutchess County Planning Unit**

Place Name	Population 1990	Population 2000	Population 2010	Population 2020	Change in Population 1990 to 2020	Percent Change in Population 1990 to 2020	Change in Population 2010 to 2020	Percent Change in Population 2010 to 2020
Dutchess County	259,462	280,150	297,488	295,911	20,688	8.0%	-1,577	-0.5%
C/Beacon	13,243	14,810	15,541	13,769	1,567	11.8%	-1,772	-11.4%
C/Poughkeepsie	28,844	29,871	32,736	31,577	1,027	3.6%	-1,159	-3.5%
T/Amenia	5,195	4,048	4,436	3,769	-1,147	-22.1%	-667	-15.0%
T/Beekman	10,447	13,655	14,621	14,172	3,208	30.7%	-449	-3.1%
T/Clinton	3,760	4,010	4,312	4,037	250	6.6%	-275	-6.4%
T/Dover	7,778	8,565	8,699	8,415	787	10.1%	-284	-3.3%
T/East Fishkill	22,101	25,589	29,029	29,707	3,488	15.8%	678	2.3%
T/Fishkill	15,698	17,521	19,936	22,060	1,823	11.6%	2,124	10.7%
T/Hyde Park	21,230	20,851	21,571	21,021	-379	-1.8%	-550	-2.5%
T/La Grange	13,274	14,928	15,730	15,975	1,654	12.5%	245	1.6%
T/Milan	1,895	2,356	2,370	2,245	461	24.3%	-125	-5.3%
T/North East	2,034	2,077	2,073	2,068	43	2.1%	-5	-0.2%
T/Pawling	3,973	5,288	6,116	6,017	1,315	33.1%	-99	-1.6%
T/Pine Plains	2,287	2,569	2,473	2,218	282	12.3%	-255	-10.3%
T/Pleasant Valley	8,063	9,066	9,672	9,799	1,003	12.4%	127	1.3%
T/Poughkeepsie	39,254	41,800	43,341	44,544	2,546	6.5%	1,203	2.8%
T/Red Hook	6,736	7,440	8,240	6,966	704	10.5%	-1,274	-15.5%
T/Rhinebeck	4,833	4,685	4,891	4,899	-148	-3.1%	8	0.2%
T/Stanford	3,495	3,544	3,823	3,682	49	1.4%	-141	-3.7%
T/Union Vale	3,577	4,546	4,877	4,558	969	27.1%	-319	-6.5%
T/Wappinger	22,292	22,322	21,526	23,040	30	0.1%	1,514	7.0%
T/Washington	3,140	3,313	3,289	3,067	173	5.5%	-222	-6.7%
V/Fishkill	1,957	1,735	2,171	2,166	-222	-11.3%	-5	-0.2%
V/Millbrook	1,339	1,429	1,452	1,455	90	6.7%	3	0.2%
V/Millerton	884	925	958	903	41	4.6%	-55	-5.7%
V/Pawling	1,974	2,233	2,347	1,995	259	13.1%	-352	-15.0%
V/Red Hook	1,794	1,805	1,961	1,975	11	0.6%	14	0.7%
V/Rhinebeck	2,725	3,077	2,657	2,697	352	12.9%	40	1.5%
V/Tivoli	1,035	1,163	1,118	1,012	128	12.4%	-106	-9.5%
V/Wappingers Falls	4,605	4,929	5,522	6,103	324	7.0%	581	10.5%
Source: US Census Bureau								
Town data does not include Village populations								

Dutchess County Population U.S. Census 2020 Appendix A: Map 1

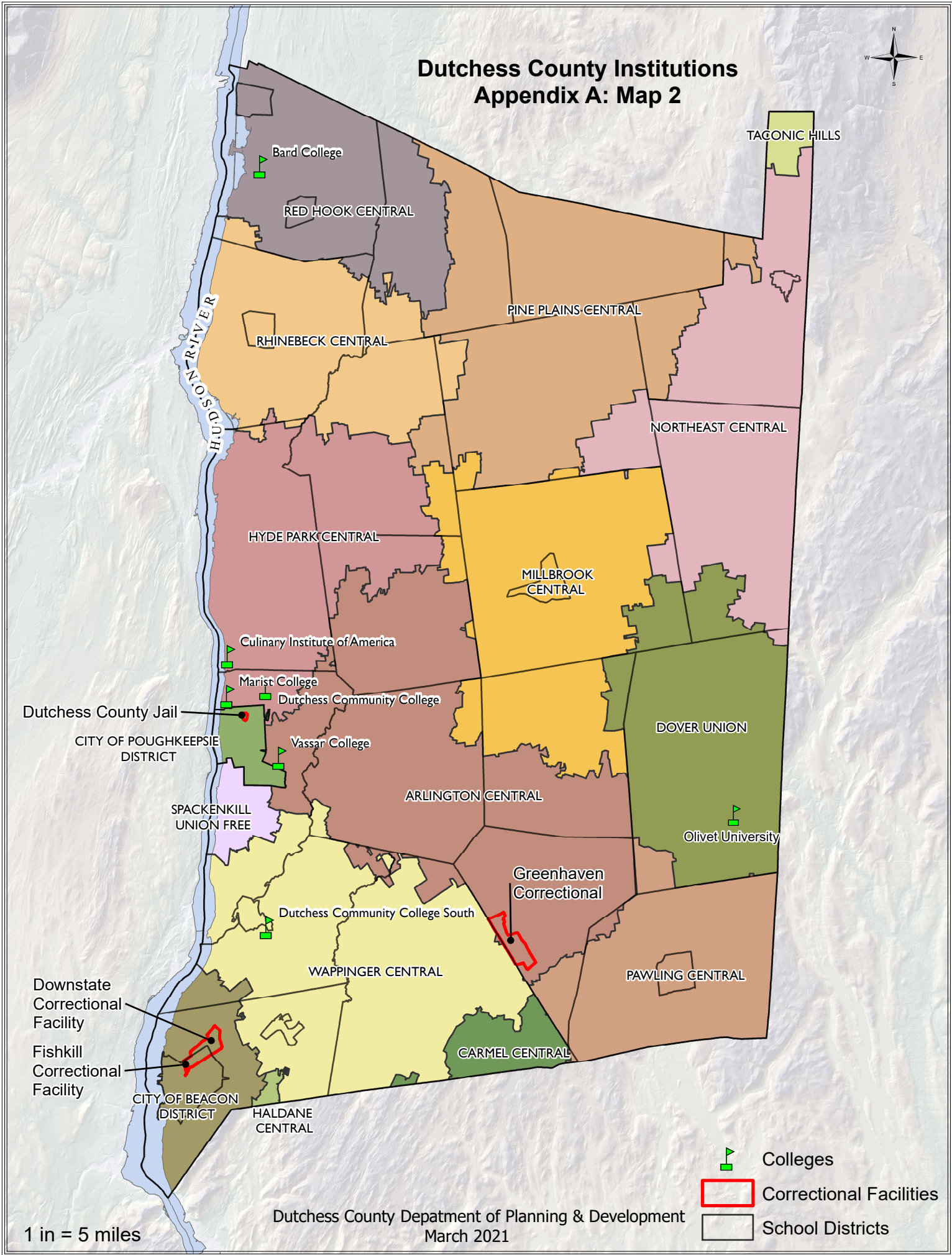


1 in = 5 miles

Dutchess County Department of Planning & Development
August 2021

Dutchess County Institutions

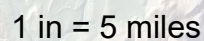
Appendix A: Map 2



1 in = 5 miles

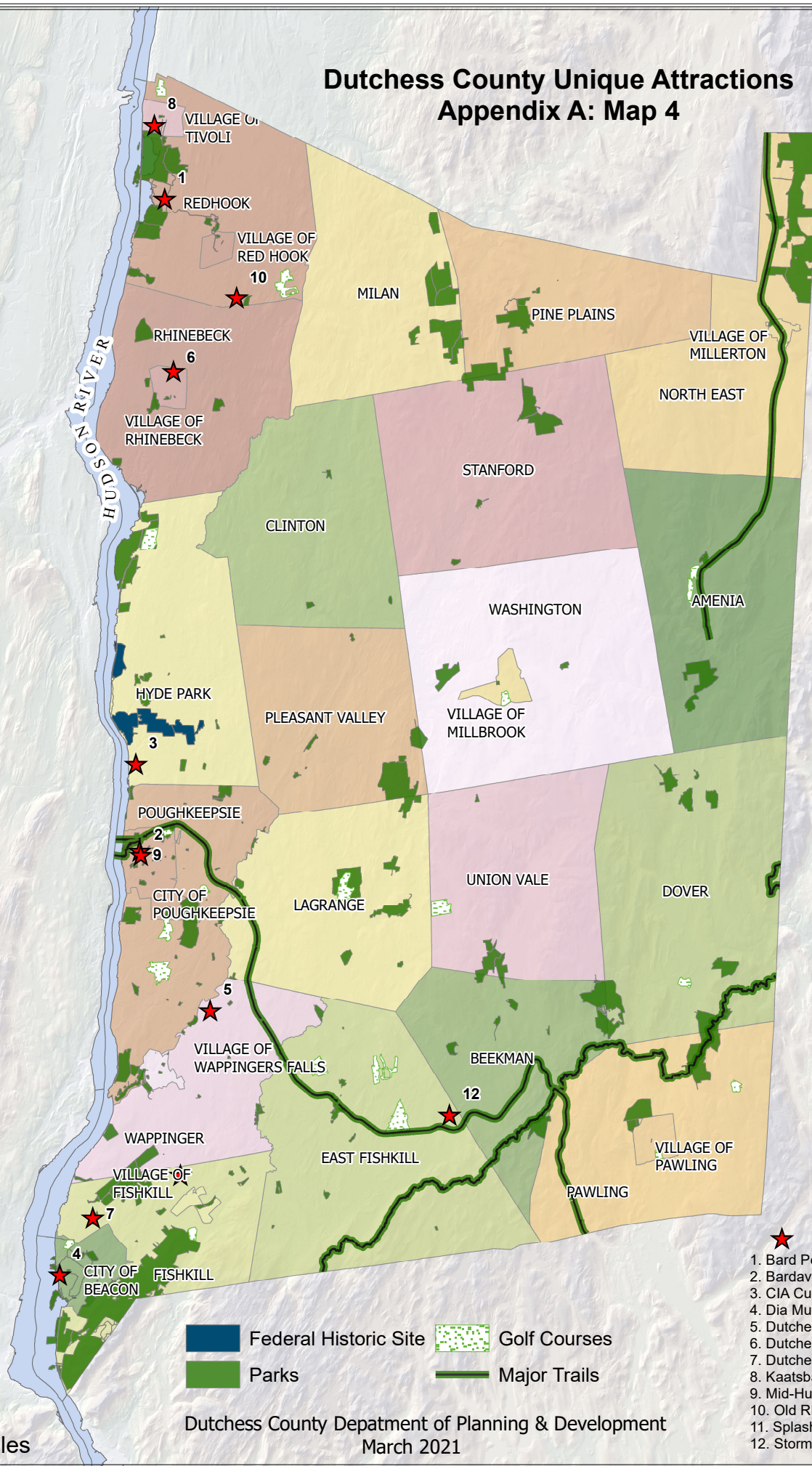
Dutchess County Department of Planning & Development
March 2021

- Colleges
- Correctional Facilities
- School Districts



70

Dutchess County Unique Attractions Appendix A: Map 4



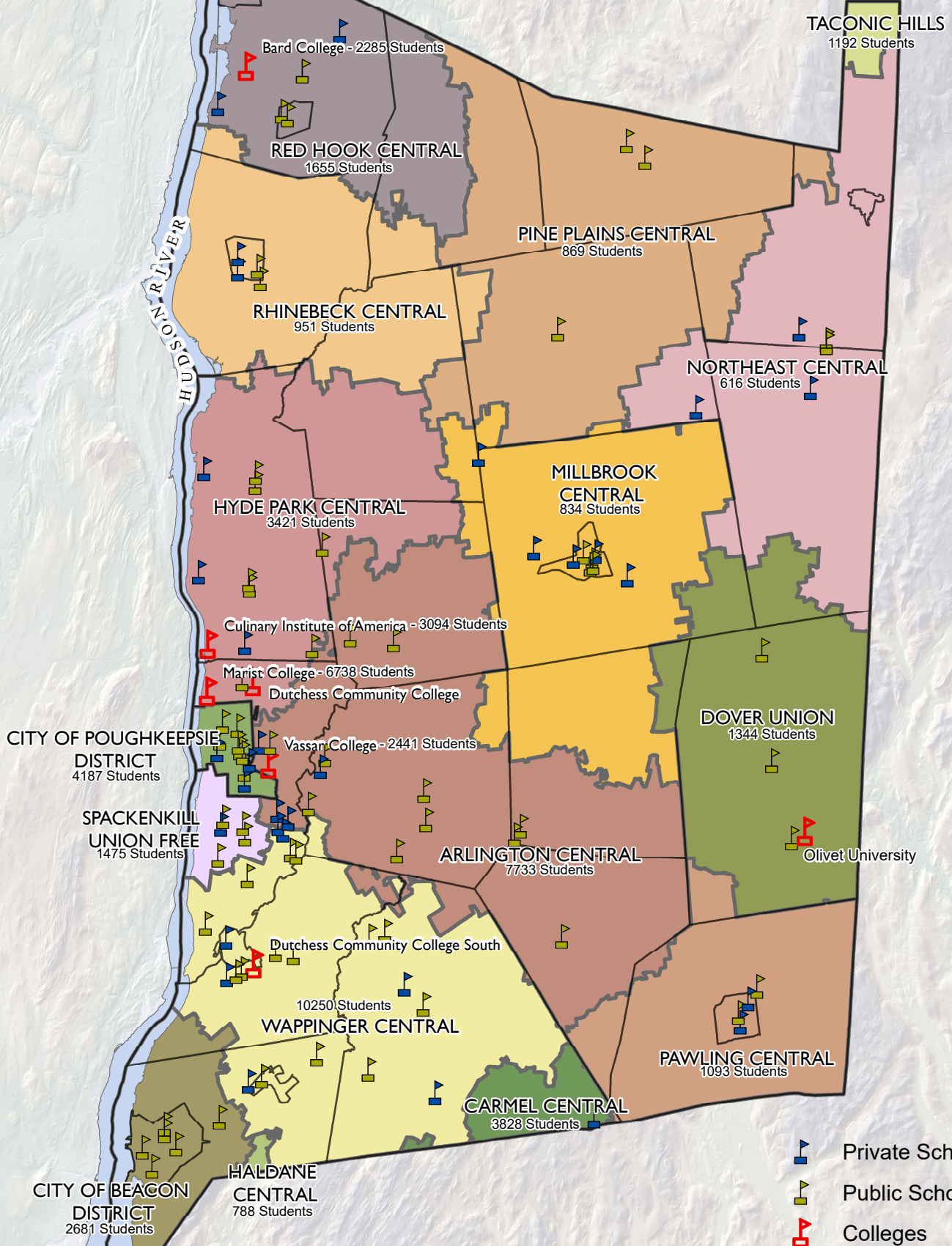
- ★ Attractions**
1. Bard Performing Arts Center
 2. Bardavon
 3. CIA Culinary Institute
 4. Dia Museum
 5. Dutchess Airport
 6. Dutchess Fairgrounds
 7. Dutchess Stadium
 8. Kaatsbaan Dance Center
 9. Mid-Hudson Civic Center
 10. Old Rhinebeck Aerodome
 11. Splashdown Waterpark
 12. Stormville Airport Flea Market

- Federal Historic Site
- Golf Courses
- Parks
- Major Trails

Dutchess County Department of Planning & Development
March 2021

1 in = 5 miles

Dutchess County School Districts Appendix A: Map 5



1 in = 5 miles

Dutchess County Department of Planning & Development
March 2021

Appendix B

Appendix B: Table 1 Municipal Solid Waste (MSW) Rural, Suburban, Urban Analysis

The next step is to Identify the Materials Composition of the Waste Stream based on population density, and demographic characteristics of the Planning Unit.

This tab will provide the PU with a more detailed estimate of the materials present in the waste stream, which could be crucial when prioritizing the initiatives and programs of the LSWMP.

The population density distribution has been calculated based on the 2010 Census data and will be auto populated when a planning unit is selected. The following parameters were used:

- Rural: <325 persons/mi²
- Suburban: >325 and <5,000 persons/mi²
- Urban: >5,000 persons/mi²

Under **Density Population Distribution**, the user has the option to modify the percentage values for the **Sector** (*Residential and Commercial/Institutional*) based on land use and specific characteristics of each planning unit. For example: A rural population in Westchester County could be 64% Residential and 36% Commercial / Institutional, while in Wyoming County might be 50% Residential and 50% Commercial / Institutional.

The results are presented on the last right column under **MSW Materials Composition**. Be aware of color changes on the cells, whenever a category represents over 15% of the total waste generation, the cell will turn **red** to easily identify key categories of the waste stream. It will also facilitate the selection of initiatives, programs, and infrastructure for the solid waste management system.

Note: If no data exists, use the pre-populated information in the worksheet.

Dutchess County										2021-2030		
Density Population Distribution		Rural			Suburban			Urban			MSW Materials Composition (%)	
		20.19%			65.90%			13.91%				
		Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined	Residential	Comm/Inst.	Combined		
58.00%	42.00%	100.00%	55.00%	45.00%	100.00%	58.00%	42.00%	100.00%				
Material	Newspaper	5.20%	1.90%	3.81%	5.00%	1.90%	3.61%	6.60%	2.00%	4.67%	3.80%	
	Corrugated Cardboard	6.60%	13.90%	9.67%	6.60%	13.90%	9.89%	6.90%	13.70%	9.76%	9.82%	
	Other Recyclable Paper	Paperboard	3.20%	1.10%	2.32%	3.30%	1.00%	2.27%	3.60%	0.90%	2.47%	2.30%
		Office Paper	0.80%	3.80%	2.06%	0.90%	4.20%	2.39%	1.10%	5.80%	3.07%	2.42%
		Junk Mail	3.00%	0.70%	2.03%	3.20%	0.70%	2.08%	3.50%	0.70%	2.32%	2.10%
		Other Commercial Printing	1.70%	2.30%	1.95%	1.70%	2.40%	2.02%	2.30%	2.60%	2.43%	2.06%
		Magazines	1.10%	0.90%	1.02%	1.00%	0.80%	0.91%	1.10%	1.00%	1.06%	0.95%
		Books	0.50%	0.30%	0.42%	0.50%	0.30%	0.41%	0.60%	0.40%	0.52%	0.43%
		Paper Bags	0.50%	0.20%	0.37%	0.50%	0.20%	0.37%	0.60%	0.20%	0.43%	0.38%
		Phone Books	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.20%	0.26%	0.29%
	Poly-Coated	0.20%	0.30%	0.24%	0.20%	0.20%	0.20%	0.30%	0.20%	0.26%	0.22%	
	Other Recyclable Paper (Total)	11.30%	9.90%	10.71%	11.60%	10.10%	10.93%	13.40%	12.00%	12.81%	11.14%	
	Other Compostable Paper	6.80%	6.80%	6.80%	6.40%	6.40%	6.40%	6.80%	6.80%	6.80%	6.54%	
	Total Paper	29.90%	32.50%	30.99%	29.60%	32.30%	30.82%	33.70%	34.50%	34.04%	31.30%	
	Ferrous/Aluminum Containers	Ferrous Containers	1.90%	1.00%	1.52%	1.20%	0.70%	0.98%	1.40%	0.70%	1.11%	1.10%
		Aluminum Containers	0.70%	0.40%	0.57%	0.60%	0.30%	0.47%	0.50%	0.40%	0.46%	0.49%
	Ferrous/Aluminum Containers (Total)	2.60%	1.40%	2.10%	1.80%	1.00%	1.44%	1.90%	1.10%	1.56%	1.58%	
	Other Ferrous Metals	5.20%	5.40%	5.28%	5.00%	5.80%	5.36%	3.30%	3.70%	3.47%	5.08%	
	Other Non-Ferrous Metals	Other aluminum	0.20%	0.30%	0.24%	0.20%	0.30%	0.25%	0.20%	0.30%	0.24%	0.24%
		Automotive batteries	0.80%	0.50%	0.67%	0.70%	0.40%	0.57%	0.20%	0.20%	0.20%	0.54%
		Other non-aluminum	0.50%	0.30%	0.42%	0.30%	0.40%	0.35%	0.40%	0.20%	0.32%	0.36%
	Other Non-Ferrous Metals (Total)	1.50%	1.10%	1.33%	1.20%	1.10%	1.16%	0.80%	0.70%	0.76%	1.14%	
	Total Metals	9.30%	7.90%	8.71%	8.00%	7.90%	7.96%	6.00%	5.50%	5.79%	7.81%	
	PET Containers	1.10%	0.80%	0.97%	0.90%	0.80%	0.86%	1.20%	1.00%	1.12%	0.92%	
	HDPE Containers	1.10%	0.60%	0.89%	0.90%	0.70%	0.81%	1.00%	0.70%	0.87%	0.84%	
	Other Plastic (3-7) Containers	0.20%	0.10%	0.16%	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%	0.19%	
	Film Plastic	5.70%	5.90%	5.78%	5.50%	5.80%	5.64%	5.80%	5.80%	5.80%	5.69%	
	Other Plastic	Durables	3.10%	3.20%	3.14%	3.00%	3.20%	3.09%	3.20%	3.30%	3.24%	3.12%
		Non-Durables	1.60%	1.80%	1.68%	1.60%	1.80%	1.69%	1.80%	1.90%	1.84%	1.71%
		Packaging	1.40%	1.10%	1.27%	1.40%	1.10%	1.27%	1.50%	1.10%	1.33%	1.28%
Other Plastic (Total)	6.10%	6.10%	6.10%	6.00%	6.10%	6.05%	6.50%	6.30%	6.42%	6.11%		
Total Plastics	14.20%	13.50%	13.91%	13.50%	13.60%	13.55%	14.70%	14.00%	14.41%	13.74%		
Glass Bottles, Jars and Containers	4.10%	3.80%	3.97%	3.90%	3.80%	3.86%	4.30%	3.80%	4.09%	3.91%		
Other Glass (Flat glass, dishware, light bulbs, etc.)	0.50%	0.40%	0.46%	0.30%	0.40%	0.35%	0.40%	0.40%	0.40%	0.38%		
Total Glass	4.60%	4.20%	4.43%	4.20%	4.20%	4.20%	4.70%	4.20%	4.49%	4.29%		
Food Scraps	12.70%	13.30%	12.95%	12.90%	15.50%	14.07%	17.20%	25.20%	20.56%	14.75%		
Leaves and Grass / Pruning and Trimmings	3.10%	1.10%	2.26%	11.30%	9.10%	10.31%	4.20%	1.50%	3.07%	7.68%		
Total Organics	15.80%	14.40%	15.21%	24.20%	24.60%	24.38%	21.40%	26.70%	23.63%	22.42%		
Clothing Footwear, Towels, Sheets	4.60%	3.00%	3.93%	4.40%	3.20%	3.86%	4.80%	2.50%	3.83%	3.87%		
Carpet	1.40%	1.30%	1.36%	1.70%	1.40%	1.57%	1.70%	0.90%	1.36%	1.50%		
Total Textiles	6.00%	4.30%	5.29%	6.10%	4.60%	5.43%	6.50%	3.40%	5.20%	5.37%		
Total Wood (Pallets, crates, adulterated and non-adulterated wood)	4.10%	9.00%	6.16%	2.90%	4.10%	3.44%	2.00%	3.50%	2.63%	3.88%		
DIY - Construction & Renovation Materials	8.00%	7.60%	7.83%	3.80%	2.70%	3.31%	4.40%	3.80%	4.15%	4.34%		
Diapers	1.90%	1.10%	1.56%	2.10%	1.20%	1.70%	2.30%	1.10%	1.80%	1.68%		
Electronics	1.30%	1.40%	1.34%	1.60%	1.70%	1.65%	1.30%	1.30%	1.30%	1.54%		
Tires	1.80%	1.80%	1.80%	1.70%	1.40%	1.57%	0.50%	0.40%	0.46%	1.46%		
HHW	0.60%	0.00%	0.35%	0.60%	0.00%	0.33%	0.50%	0.00%	0.29%	0.33%		
Soils and Fines	0.60%	0.60%	0.60%	0.10%	0.20%	0.15%	0.10%	0.10%	0.10%	0.23%		
Other Composite Materials - Durable and/or Inert	1.90%	1.70%	1.82%	1.60%	1.50%	1.56%	1.90%	1.50%	1.73%	1.63%		
Total Miscellaneous	16.10%	14.20%	15.30%	11.50%	8.70%	10.24%	11.00%	8.20%	9.82%	11.20%		
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		

Appendix B: Table 2, Municipal Solid Waste (MSW) Detailed Composition Analysis

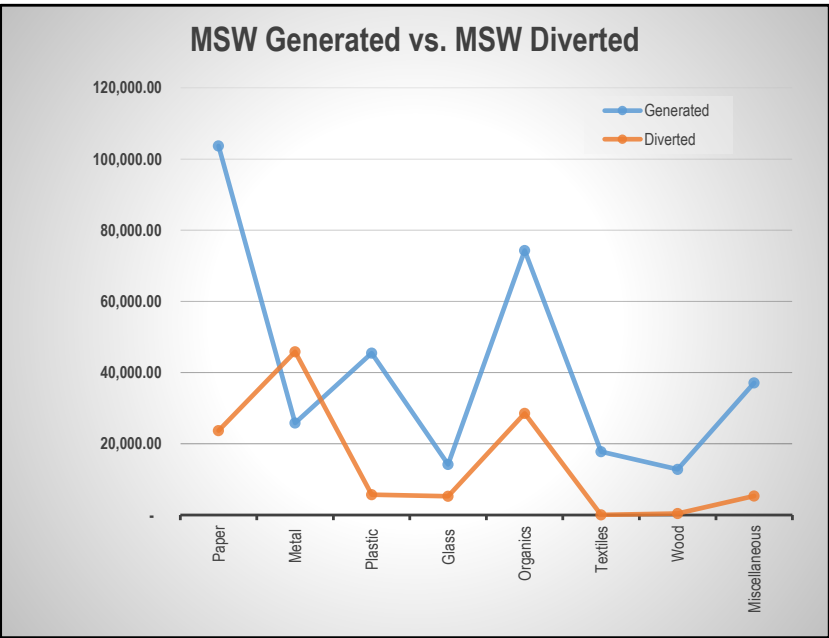
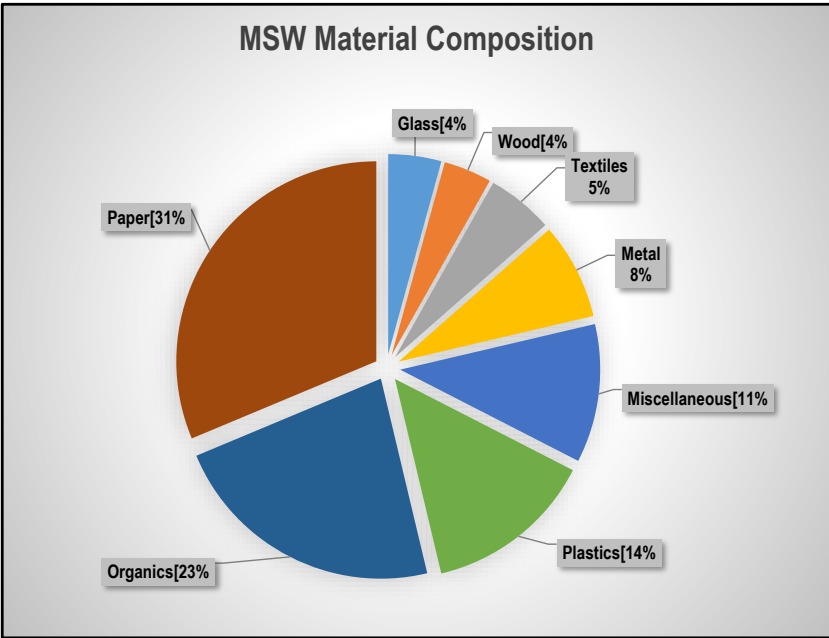
On this tab, the composition of the municipal waste stream will be estimated based on the amount of material generated in the planning unit and the state average of the different waste materials. A pie chart will be generated to clearly show the composition of the waste stream and to identify key categories of the waste stream for the planning unit.

The total tons of MSW diverted per year will be auto populated based on previous data inputs, while the amount tons diverted for each material by category should be populated by the user. Purple cells should be used for amounts of diverted waste by type of material, and a totaled number by category (e.g. paper, metal) should be put in the green cells. After inputting the data, a graphic will be generated to show the MSW generation and diversion streams in Tons.

Make sure that the total amounts at the bottom of the page are consistent with the data you already put into the calculator. If the cell is highlighted in red, you should revise the amounts of diverted waste by category.

Dutchess County2021-2030

		2020		
		MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)
Material		100.0%	331,203	114,951.00
Paper	Newspaper	3.8%	12,569	157.00
	Corrugated Cardboard	9.8%	32,534	15,756.00
	Other Recyclable Paper (Total)	11.1%	36,911	7,806.00
	Other Compostable Paper	6.5%	21,649	
	Total Paper	31.3%	103,662	23,719.00
Metal	Ferrous/Aluminum Containers (Total)	1.6%	5,265	1,790.00
	Other Ferrous Metals	5.1%	16,830	41,659.00
	Other Non-Ferrous Metals (Total)	1.1%	3,761	2,405.00
	Total Metals	7.8%	25,856	45,854.00
Plastic	PET Containers	0.9%	3,032	2,516.00
	HDPE Containers	0.8%	2,766	1,728.00
	Other Plastic (3-7) Containers	0.2%	634	864.00
	Film Plastic	5.7%	18,839	470.00
	Other Plastic (Total)	6.1%	20,229	155.00
	Total Plastics	13.7%	45,500	5,733.00
Glass	Glass Bottles, Jars and Containers	3.9%	12,956	5,249.00
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.4%	1,244	
	Total Glass	4.3%	14,199	5,249.00
Organics	Food Scraps	14.7%	48,843	1,627.00
	Leaves and Grass / Pruning and Trimmings	7.7%	25,427	26,951.00
	Total Organics	22.4%	74,269	28,578.00
Textiles	Clothing Footwear, Towels, Sheets	3.9%	12,818	37.00
	Carpet	1.5%	4,952	
	Total Textiles	5.4%	17,770	37.00
Wood	Total Wood (Pallets, crates, adulterated and non-adulterated wood)	3.9%	12,838	416.00
Miscellaneous	DIY Construction & Renovation Materials	4.3%	14,362	629.00
	Diapers	1.7%	5,573	
	Electronics	1.5%	5,087	473.00
	Tires	1.5%	4,830	344.00
	HHW	0.3%	1,087	1,657.00
	Soils and Fines	0.2%	764	
	Other Composite Materials - Durable and/or inert	1.6%	5,406	2,262.00
	Total Miscellaneous	11.2%	37,108	5,365.00
Total		100.0%	331,203	114,951.00



Appendix B, Table 3 Municipal Solid Waste (MSW) Diversion Projections

This tab will be used to create goals for the amount of material the planning unit will divert for each year of the planning period. These goals will be entered as percentages, based on how much of the material generated will be diverted for recycling or beneficial use.

The diversion goal percentages will be entered in the **purple cells** for each material and each year of the planning period.

Dutchess County

2021-2030

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Projected MSW Generation (Tons/yr)	330,632	326,910	323,230	319,591	315,993	312,436	308,919	305,441	302,003	298,603
MSW Diverted (Tons/yr)	123,268	117,979	119,351	120,049	120,715	121,272	121,800	122,302	122,777	123,225

			2020				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
			MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted	% MSW Diverted
Material			100.0%	331,203	114,951	34.7%	37.3%	36.1%	36.9%	37.6%	38.2%	38.8%	39.4%	40.0%	40.7%	41.3%
Paper	Newspaper	3.8%	12,569	157	1.2%	1.3%	1.4%	1.5%	1.6%	1.7%	1.8%	1.9%	2.0%	2.1%	2.2%	
	Corrugated Cardboard	9.8%	32,534	15,756	48.4%	48.5%	49.0%	50.0%	51.0%	52.0%	53.0%	54.0%	55.0%	56.0%	57.0%	
	Other Recyclable Paper (Total)	11.1%	36,911	7,806	21.1%	21.5%	22.0%	23.0%	24.0%	25.0%	26.0%	27.0%	28.0%	29.0%	30.0%	
	Other Compostable Paper	6.5%	21,649	0	0.0%	5.0%	10.0%	15.0%	16.0%	17.0%	18.0%	19.0%	20.0%	21.0%	22.0%	
	Total Paper	31.3%	103,662	23,719	22.9%	24.1%	25.5%	27.2%	28.1%	29.0%	29.9%	30.8%	31.7%	32.5%	33.4%	
Metal	Ferrous/Aluminum Containers (Total)	1.6%	5,265	1,790	34.0%	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%	41.0%	42.0%	43.0%	44.0%	
	Other Ferrous Metals	5.1%	16,830	41,659	247.5%	248.0%	248.5%	249.0%	249.5%	250.0%	250.0%	250.0%	250.0%	250.0%	250.0%	
	Other Non-Ferrous Metals (Total)	1.1%	3,761	2,405	63.9%	64.0%	65.0%	66.0%	67.0%	68.0%	69.0%	70.0%	71.0%	72.0%	73.0%	
	Total Metals	7.8%	25,856	45,854	177.3%	177.9%	178.5%	179.2%	179.9%	180.6%	180.9%	181.3%	181.6%	182.0%	182.3%	
Plastic	PET Containers	0.9%	3,032	2,516	83.0%	83.5%	84.0%	84.5%	85.0%	85.5%	86.0%	86.5%	87.0%	87.5%	88.0%	
	HDPE Containers	0.8%	2,766	1,728	62.5%	63.0%	63.5%	64.0%	64.5%	65.0%	65.5%	66.0%	66.5%	67.0%	67.5%	
	Other Plastic (3-7) Containers	0.2%	634	864	136.2%	137.0%	137.5%	138.0%	138.0%	138.0%	138.0%	138.0%	138.0%	138.0%	138.0%	
	Film Plastic	5.7%	18,839	470	2.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
	Other Plastic (Total)	6.1%	20,229	155	0.8%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
	Total Plastics	13.7%	45,500	5,733	12.6%	13.0%	13.1%	13.1%	13.2%	13.3%	13.3%	13.4%	13.4%	13.5%	13.6%	
Glass	Glass Bottles, Jars and Containers	3.9%	12,956	5,249	40.5%	41.0%	41.5%	42.0%	42.5%	43.0%	43.5%	44.0%	44.5%	45.0%	45.5%	
	Other Glass (Flat glass, dishware, light bulbs, etc.)	0.4%	1,244	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total Glass	4.3%	14,199	5,249	37.0%	37.4%	37.9%	38.3%	38.8%	39.2%	39.7%	40.1%	40.6%	41.1%	41.5%	
Organics	Food Scraps	14.7%	48,843	1,627	3.3%	4.0%	4.5%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%	12.0%	
	Leaves and Grass / Pruning and Trimmings	7.7%	25,427	26,951	106.0%	106.0%	106.5%	107.0%	107.5%	108.0%	108.5%	109.0%	109.5%	110.0%	110.5%	
	Total Organics	22.4%	74,269	28,578	38.5%	38.9%	39.4%	39.9%	40.7%	41.6%	42.4%	43.2%	44.1%	44.9%	45.7%	
Textiles	Clothing Footwear, Towels, Sheets	3.9%	12,818	37	0.3%	50.0%	1.0%	1.5%	2.0%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%	
	Carpet	1.5%	4,952	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total Textiles	5.4%	17,770	37	0.2%	36.1%	0.7%	1.1%	1.4%	1.8%	2.2%	2.5%	2.9%	3.2%	3.6%	
Wood	Total Wood (Pallets, crates, adulterated and non-adulterated wood)	3.9%	12,838	416	3.2%	4.0%	4.5%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	
Miscellaneous	DIY Construction & Renovation Materials	4.3%	14,362	629	4.4%	4.5%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%	
	Diapers	1.7%	5,573	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Electronics	1.5%	5,087	473	9.3%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	16.0%	17.0%	18.0%	19.0%	
	Tires	1.5%	4,830	344	7.1%	8.0%	8.5%	9.0%	9.5%	10.0%	10.5%	11.0%	11.5%	12.0%	12.5%	
	HHW	0.3%	1,087	1,657	152.5%	153.0%	153.5%	154.0%	154.5%	155.0%	155.5%	156.0%	156.5%	157.0%	157.5%	
	Soils and Fines	0.2%	764	0	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
	Other Composite Materials - Durable and/or inert	1.6%	5,406	2,262	41.8%	42.0%	42.5%	43.5%	44.0%	44.5%	45.0%	45.5%	46.0%	46.5%	47.0%	
	Total Miscellaneous	11.2%	37,108	5,365	14.5%	14.8%	15.3%	15.8%	16.3%	16.8%	17.3%	17.7%	18.2%	18.7%	19.2%	

Generation numbers for individual materials are prefilled by DEC. They do not reflect exact generation numbers for Dutchess County. Data collected from county haulers and entities show higher generation and recovery numbers for some materials, resulting in percentages over 100%.

Appendix B: Table 4 Detailed Projections - (MSW) Generation and Diversion

The final result of the Population and Municipal Composition Calculator is presented on the last tab. This tab contains data for the current year regarding waste generated and waste diverted from disposal. This tab also shows the projected waste diversion percentages, and the amount of waste in tons these percentages will divert for recycling. Total amounts of waste diverted will be calculated for each material and each year of the planning period.

Dutchess County

2021-2030

		2020				2021				2022				2023				2024				2025				2026				2027				2028				2029				2030			
		MSW Materials Composition (%)	MSW Generated (Tons)	MSW Diverted (Tons)	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted	MSW generated (Tons)	MSW Diverted	% MSW Diverted										
	Material	100.00%	331,203	114,951	34.7%	330,632	123,268	37.3%	326,910	117,979	36%	323,230	119,351	36.9%	319,591	120,049	37.6%	315,993	163,110	51.6%	312,436	121,272	38.8%	308,919	121,800	39.4%	305,441	122,302	40.0%	302,003	122,777	40.7%	298,603	123,225	41.3%										
Paper	Newspaper	3.80%	12,569	157	1.2%	12,548	163	1.3%	12,406	174	1%	12,267	184	1.5%	12,129	194	1.6%	11,992	204	1.7%	11,857	213	1.8%	11,724	223	1.9%	11,592	232	2.0%	11,461	241	2.1%	11,332	249	2.2%										
	Corrugated Cardboard	9.82%	32,534	15,756	48.4%	32,477	15,752	48.5%	32,112	15,735	49%	31,750	15,875	50.0%	31,393	16,010	51.0%	31,039	16,141	52.0%	30,690	16,266	53.0%	30,345	16,386	54.0%	30,003	16,502	55.0%	29,665	16,613	56.0%	29,331	16,719	57.0%										
	Other Recyclable Paper	Paperboard	2.30%	7,630	0	0.0%	7,617	0	0.0%	7,531	0	0%	7,446	0	0.0%	7,362	0	0.0%	7,279	0	0.0%	7,197	0	0.0%	7,116	0	0.0%	7,036	0	0.0%	6,957	0	0.0%	6,879	0	0.0%									
		Office Paper	2.42%	7,999	0	0.0%	7,985	0	0.0%	7,896	0	0%	7,807	0	0.0%	7,719	0	0.0%	7,632	0	0.0%	7,546	0	0.0%	7,461	0	0.0%	7,377	0	0.0%	7,294	0	0.0%	7,212	0	0.0%									
		Junk Mail	2.10%	6,960	0	0.0%	6,948	0	0.0%	6,870	0	0%	6,792	0	0.0%	6,716	0	0.0%	6,640	0	0.0%	6,565	0	0.0%	6,491	0	0.0%	6,418	0	0.0%	6,346	0	0.0%	6,275	0	0.0%									
		Other Commercial Printing	2.06%	6,821	0	0.0%	6,809	0	0.0%	6,733	0	0%	6,657	0	0.0%	6,582	0	0.0%	6,508	0	0.0%	6,434	0	0.0%	6,362	0	0.0%	6,290	0	0.0%	6,220	0	0.0%	6,150	0	0.0%									
		Magazines	0.95%	3,153	0	0.0%	3,148	0	0.0%	3,112	0	0%	3,077	0	0.0%	3,042	0	0.0%	3,008	0	0.0%	2,974	0	0.0%	2,941	0	0.0%	2,908	0	0.0%	2,875	0	0.0%	2,843	0	0.0%									
		Books	0.43%	1,411	0	0.0%	1,408	0	0.0%	1,392	0	0%	1,377	0	0.0%	1,361	0	0.0%	1,346	0	0.0%	1,331	0	0.0%	1,316	0	0.0%	1,301	0	0.0%	1,286	0	0.0%	1,272	0	0.0%									
		Paper Bags	0.38%	1,246	0	0.0%	1,244	0	0.0%	1,230	0	0%	1,216	0	0.0%	1,202	0	0.0%	1,189	0	0.0%	1,175	0	0.0%	1,162	0	0.0%	1,149	0	0.0%	1,136	0	0.0%	1,123	0	0.0%									
		Phone Books	0.29%	974	0	0.0%	973	0	0.0%	962	0	0%	951	0	0.0%	940	962	0.0%	930	951	0.0%	919	940	0.0%	909	930	0.0%	898	919	0.0%	888	909	0.0%	878	900	0.0%									
	Poly-Coated	0.22%	717	0	0.0%	716	0	0.0%	708	0	0%	700	0	0.0%	692	0	0.0%	684	0	0.0%	677	0	0.0%	669	0	0.0%	661	0	0.0%	654	0	0.0%	647	0	0.0%										
	Other Recyclable Paper (Total)	11.14%	36,911	7,806	21.1%	36,847	7,922	21.5%	36,432	8,015	22%	36,022	8,285	23.0%	35,617	8,548	24.0%	35,216	8,804	25.0%	34,819	9,053	26.0%	34,427	9,295	27.0%	34,040	9,531	28.0%	33,657	9,760	29.0%	33,278	9,983	30.0%										
	Other Compostable Paper	6.54%	21,649	0	0.0%	21,611	1,081	5.0%	21,368	2,137	10%	21,128	3,169	15.0%	20,890	3,342	16.0%	20,655	3,511	17.0%	20,422	3,676	18.0%	20,192	3,837	19.0%	19,965	3,993	20.0%	19,740	4,145	21.0%	19,518	4,294	22.0%										
	Total Paper	31.30%	103,662	23,719	22.9%	103,484	24,917	24.1%	102,319	26,060	25%	101,167	27,513	27.2%	100,028	28,095	28.1%	98,902	28,660	29.0%	97,789	29,208	29.9%	96,688	29,741	30.8%	95,599	30,258	31.7%	94,523	30,759	32.5%	93,459	31,245	33.4%										
Metal	Ferrous/Aluminum Containers	Ferrous Containers	1.10%	3,655	1,243	34.0%	3,649	887	24.3%	3,608	902	25%	3,567	916	25.7%	3,527	931	26.4%	3,487	944	27.1%	3,448	958	27.8%	3,409	970	28.5%	3,371	983	29.2%	3,333	995	29.9%	3,296	1,007	30.5%									
		Aluminum Containers	0.49%	1,610	547	34.0%	1,607	172	10.7%	1,589	175	11%	1,571	178	11.3%	1,553	180	11.6%	1,536	183	11.9%	1,519	186	12.2%	1,501	188	12.5%	1,485	191	12.8%	1,468	193	13.1%	1,451	195	13.5%									
	Ferrous/Aluminum Containers (Total)	1.59%	5,265	1,790	34.0%	5,256	1,840	35.0%	5,197	1,871	36%	5,138	1,901	37.0%	5,081	1,931	38.0%	5,023	1,959	39.0%	4,967	1,987	40.0%	4,911	2,013	41.0%	4,856	2,039	42.0%	4,801	2,064	43.0%	4,747	2,089	44.0%										
	Other Ferrous Metals	5.08%	16,830	41,659	247.5%	16,801	41,666	248.0%	16,612	41,280	249%	16,425	40,898	249.5%	16,240	40,519	249.5%	16,057	40,143	250.0%	15,876	39,691	250.0%	15,698	39,244	250.0%	15,521	38,802	250.0%	15,346	38,366	250.0%	15,173	37,934	250.0%										
	Other Non-Ferrous Metals	Other aluminum	0.24%	808	0	0.0%	807	0	0.0%	798	0	0%	789	0	0.0%	780	0	0.0%	771	0	0.0%	762	0	0.0%	754	0	0.0%	745	0	0.0%	737	0	0.0%	729	0	0.0%									
		Automotive batteries	0.54%	1,776	0	0.0%	1,773	0	0.0%	1,753	0	0%	1,733	0	0.0%	1,714	0	0.0%	1,694	0	0.0%	1,675	0	0.0%	1,657	0	0.0%	1,638	0	0.0%	1,619	0	0.0%	1,601	0	0.0%									
		Other non-aluminum	0.36%	1,177	0	0.0%	1,175	0	0.0%	1,162	0	0%	1,148	0	0.0%	1,136	0	0.0%	1,123	0	0.0%	1,110	0	0.0%	1,098	0	0.0%	1,085	0	0.0%	1,073	0	0.0%	1,061	0	0.0%									
	Other Non-Ferrous Metals (Total)	1.14%	3,761	2,405	63.9%	3,754	2,403	64.0%	3,712	2,413	65%	3,670	2,422	66.0%	3,629	2,431	67.0%	3,588	2,440	68.0%	3,548	2,448	69.0%	3,508	2,455	70.0%	3,468	2,463	71.0%	3,429	2,469	72.0%	3,391	2,475	73.0%										
	Total Metals	7.81%	25,856	45,854	177.3%	25,811	45,909	177.9%	25,521	45,564	179%	25,234	45,221	179.2%	24,949	44,881	179.9%	24,669	44,542	180.6%	24,391	44,126	180.9%	24,116	43,713	181.3%	23,845	43,304	181.6%	23,576	42,899	182.0%	23,311	42,497	182.3%										
Plastic	PET Containers	0.92%	3,032	2,516	83.0%	3,026	2,527	83.5%	2,992	2,514	84%	2,959	2,500	84.5%	2,925	2,487	85.0%	2,892	2,473	85.5%	2,860	2,459	86.0%	2,828	2,446	86.5%	2,796	2,432	87.0%	2,764	2,419	87.5%	2,733	2,405	88.0%										
	HDPE Containers	0.84%	2,766	1,728	62.5%	2,761	1,739	63.0%	2,730	1,733	64%	2,699	1,727	64.0%	2,669	1,721	64.5%	2,639	1,715	65.0%	2,609	1,709	65.5%	2,580	1,703	66.0%	2,551	1,696	66.5%	2,522	1,690	67.0%	2,493	1,683	67.5%										
	Other Plastic (3-7) Containers	0.19%	634	864	136.2%	633	868	137.0%	626	861	138%	619	854	138.0%	612	845	138.0%	605	836	138.0%	598	826	138.0%	592	816	138.0%	585	807	138.0%	578	798	138.0%	572	789	138.0%										
	Film Plastic	5.69%	18,839	470	2.5%	18,806	564	3.0%	18,595	558	3%	18,385	552	3.0%	18,178	545	3.0%	17,974	44,934	250.0%	17,771	533	3.0%	17,571	527	3.0%	17,374	521	3.0%	17,178	515	3.0%	16,985	510	3.0%										
	Other Plastic	Durables	3.12%	10,339	0	0.0%	10,321	0	0.0%	10,205	0	0%	10,090	0	0.0%	9,976	0	0.0%	9,864	0	0.0%	9,753	0	0.0%	9,643	0	0.0%	9,535	0	0.0%	9,427	0	0.0%	9,321	0	0.0%									
		Non-Durables	1.71%	5,663	0	0.0%	5,654	0	0.0%	5,590	0	0%	5,527	0	0.0%	5,465	0	0.0%	5,403	0	0.0%	5,342	0	0.0%	5,282	0																			

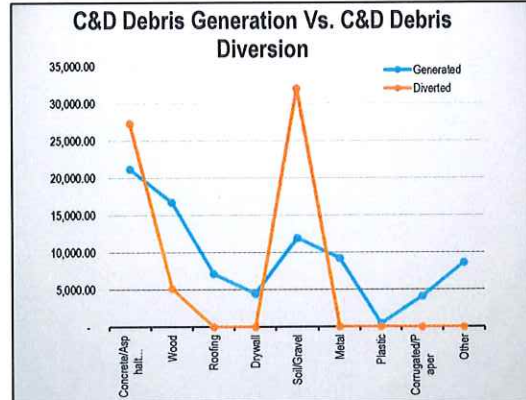
Appendix B, Table 5 Construction & Demolition (C&D) Debris Diversion Analysis

Based on the total amount of C&D debris generated in the Planning Unit, which was entered in Step 3, this step will be used to calculate the % of this material that is diverted from the C&D debris waste stream. For this step, enter the amount of waste diverted for each material in the **purple** cells.

Dutchess County

2021-2031

		C&D Debris Materials Composition (%)	2020		
			C&D Debris Generated (Tons)	C&D Debris Diverted (Tons)	% C&D Diverted
Materials	Concrete/Asphalt/Rock/Brick	14.2%	21,162.5	27,339.0	129.2%
	Wood	11.2%	16,714.4	5,131.0	30.7%
	Roofing	4.8%	7,130.2	0.0	0.0%
	Drywall	3.0%	4,466.8	0.0	0.0%
	Soil/Gravel	8.0%	11,938.3	32,037.0	268.4%
	Metal	6.2%	9,215.3	60.0	0.7%
	Plastic	0.3%	449.1	0.0	0.0%
	Corrugated cardboard/Paper	2.8%	4,131.7	16.0	0.4%
	Other	5.8%	8,641.4	0.0	0.0%
Total			149,066.0	64,583.0	43.3%



Appendix B, Table 6 Construction and Demolition (C&D) Debris Generation and Diversion Projections

This tab will be used to create goals for the amount of C&D debris the planning unit will divert for each year of the planning period. These goals will be entered as percentages, based on how much of the material generated that will be diverted for recycling or beneficial use.
The diversion goal percentages will be entered in the purple cells for each material and each year of the planning period.

		Dutchess County															2021-2031																		
		2020				2021			2022			2023			2024			2025			2026			2027			2028			2029			2030		
		C&D Debris Materials Composition (%)	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted	C&D Debris Generated (Tons)	C&D Debris Diverted	% C&D Diverted			
Materials	Concrete/Asphalt /Rock/Brick	14.2%	21,162.5	27,339.0	129.2%	21,295.1	26,618.9	125.0%	21,437.1	27,010.7	126.0%	21,579.1	27,405.4	127.0%	21,721.0	27,802.9	128.0%	21863.0	28203.3	129.0%	22,005.0	28,606.5	130.0%	22,146.9	29,012.5	131.0%	22,288.9	29,421.3	132.0%	22,430.9	29,833.1	133.0%	22,572.8	30,247.6	134.0%
	Wood	11.2%	16,714.4	5,131.0	30.7%	16,819.1	10,091.5	60.0%	16,931.3	10,328.1	61.0%	17,043.4	10,566.9	62.0%	17,155.5	10,808.0	63.0%	17267.6	11051.3	64.0%	17,379.8	11,296.8	65.0%	17,491.9	11,544.6	66.0%	17,604.0	11,794.7	67.0%	17,716.1	12,047.0	68.0%	17,828.3	12,301.5	69.0%
	Roofing	4.8%	7,130.2	0.0	0.0%	7,174.9	2,511.2	35.0%	7,222.7	2,600.2	36.0%	7,270.5	2,690.1	37.0%	7,318.4	2,781.0	38.0%	7366.2	2872.8	39.0%	7,414.0	2,965.6	40.0%	7,461.9	3,059.4	41.0%	7,509.7	3,154.1	42.0%	7,557.5	3,249.7	43.0%	7,605.4	3,346.4	44.0%
	Drywall	3.0%	4,466.8	0.0	0.0%	4,494.8	1,123.7	25.0%	4,524.7	1,176.4	26.0%	4,554.7	1,229.8	27.0%	4,584.6	1,283.7	28.0%	4614.6	1338.2	29.0%	4,644.6	1,393.4	30.0%	4,674.5	1,449.1	31.0%	4,704.5	1,505.4	32.0%	4,734.5	1,562.4	33.0%	4,764.4	1,619.9	34.0%
	Soil/Gravel	8.0%	11,938.3	32,037.0	268.4%	12,013.1	13,214.4	110.0%	12,093.2	13,423.5	111.0%	12,173.3	13,634.1	112.0%	12,253.4	13,846.3	113.0%	12333.5	14060.2	114.0%	12,413.6	14,275.6	115.0%	12,493.7	14,492.6	116.0%	12,573.7	14,711.3	117.0%	12,653.8	14,931.5	118.0%	12,733.9	15,153.4	119.0%
	Metal	6.2%	9,215.3	60.0	0.7%	9,273.0	6,491.1	70.0%	9,334.8	6,627.7	71.0%	9,396.6	6,765.6	72.0%	9,458.5	6,904.7	73.0%	9520.3	7045.0	74.0%	9,582.1	7,186.6	75.0%	9,643.9	7,329.4	76.0%	9,705.7	7,473.4	77.0%	9,767.6	7,618.7	78.0%	9,829.4	7,765.2	79.0%
	Plastic	0.3%	449.1	0.0	0.0%	451.9	158.2	35.0%	454.9	163.8	36.0%	457.9	169.4	37.0%	460.9	175.1	38.0%	463.9	180.9	39.0%	466.9	186.8	40.0%	470.0	192.7	41.0%	473.0	198.6	42.0%	476.0	204.7	43.0%	479.0	210.8	44.0%
	Corrugated /Paper	2.8%	4,131.7	16.0	0.4%	4,157.6	2,078.8	50.0%	4,185.3	2,134.5	51.0%	4,213.1	2,190.8	52.0%	4,240.8	2,247.6	53.0%	4268.5	2305.0	54.0%	4,296.2	2,362.9	55.0%	4,323.9	2,421.4	56.0%	4,351.6	2,480.4	57.0%	4,379.4	2,540.0	58.0%	4,407.1	2,600.2	59.0%
	Other	5.8%	8,641.4	0.0	0.0%	8,695.5	3,043.4	35.0%	8,753.5	3,151.2	36.0%	8,811.4	3,260.2	37.0%	8,869.4	3,370.4	38.0%	8927.4	3481.7	39.0%	8,985.4	3,594.1	40.0%	9,043.3	3,707.8	41.0%	9,101.3	3,822.5	42.0%	9,159.3	3,938.5	43.0%	9,217.2	4,055.6	44.0%
Total		56.3%	149,066.0	64,583.0	43.3%	150,000.0	65,331.2	43.6%	151,000.0	66,616.1	44.1%	152,000.0	67,912.3	44.7%	153,000.0	69,219.7	45.2%	154000.0	70538.4	45.8%	155,000.0	71,868.3	46.4%	156,000.0	73,209.5	46.9%	157,000.0	74,561.9	47.5%	158,000.0	75,925.5	48.1%	159,000.0	77,300.5	48.6%

Appendix B, Table 7 Construction & Demolition (C&D) Debris Material Composition Analysis

In order to identify the Materials Composition of the C&D Debris waste stream, it is necessary to define the sources of the waste first.

Construction and demolition (C&D) Debris consists of waste that is generated during renovation, demolition or new construction of residential and non residential properties. It also includes the new construction and/or renovation of municipal infrastructure, such as roadways, park facilities, bike trails, bridges, etc. The user should estimate these values and enter them in the

purple cells.

The results are presented on the last right column under C&D Debris Waste Stream Composition. Be aware of color changes on the cells, whenever a category represents over 15% of the total generation, the cell will turn red to easy identify key categories on the waste stream. It will also aid with the selection of isolated initiatives, programs, and infrastructure for the solid waste management system.

Note:

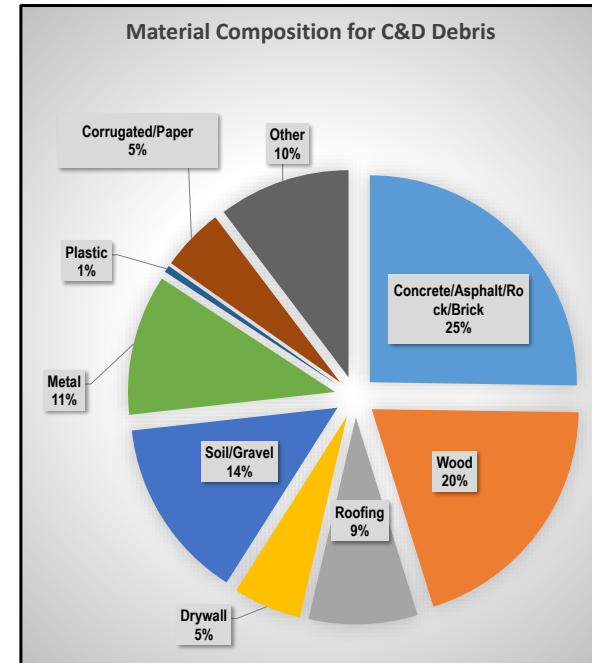
• The graphic displays the planning unit's C&D Debris generation data by material categories. It has been designed to help visualize the more representative categories of the waste stream.

Dutchess County

2021-2031

		Generation source								
		Residential				Non- Residential (commercial- institutional)				Other Municipal Infrast- ructure
		30.00%				65.00%				5.00%
		New Construction	Renovation	Demolition	Combined Residential	New Construction	Renovation	Demolition	Combined Non- Residential	Renovation
		10.00%	10.00%	10.00%	30.00%	25.00%	20.00%	20.00%	65.00%	5.00%
Materials	Concrete/ Asphalt /Rock/Brick	9.80%	16.10%	21.50%	4.74%	30.70%	19.10%	23.10%	16.12%	46.00%
	Wood	29.90%	19.10%	25.70%	7.47%	22.70%	12.40%	24.20%	13.00%	10.50%
	Roofing	6.00%	22.00%	6.10%	3.41%	2.10%	21.20%	5.10%	5.79%	0.00%
	Drywall	15.60%	7.90%	5.10%	2.86%	4.60%	6.40%	4.30%	3.29%	0.00%
	Soil/Gravel	11.30%	7.10%	18.50%	3.69%	13.10%	6.50%	15.60%	7.70%	38.00%
	Metal	5.30%	11.30%	5.20%	2.18%	12.00%	15.50%	11.10%	8.32%	2.40%
	Plastic	1.50%	0.70%	0.30%	0.25%	0.50%	0.70%	0.30%	0.33%	0.30%
	Corrugated cardboard/Paper	9.30%	2.90%	3.10%	1.53%	7.10%	4.60%	4.20%	3.54%	0.30%
	Other	11.30%	12.90%	14.50%	3.87%	7.20%	13.60%	12.10%	6.94%	2.50%
Total		100.00%	100.00%	100.00%	30.00%	100.00%	100.00%	100.00%	65.00%	100.00%

C&D Debris Materials Composition (%)
100.00%
14.20%
11.21%
4.78%
3.00%
8.01%
6.18%
0.30%
2.77%
5.80%
56.25%

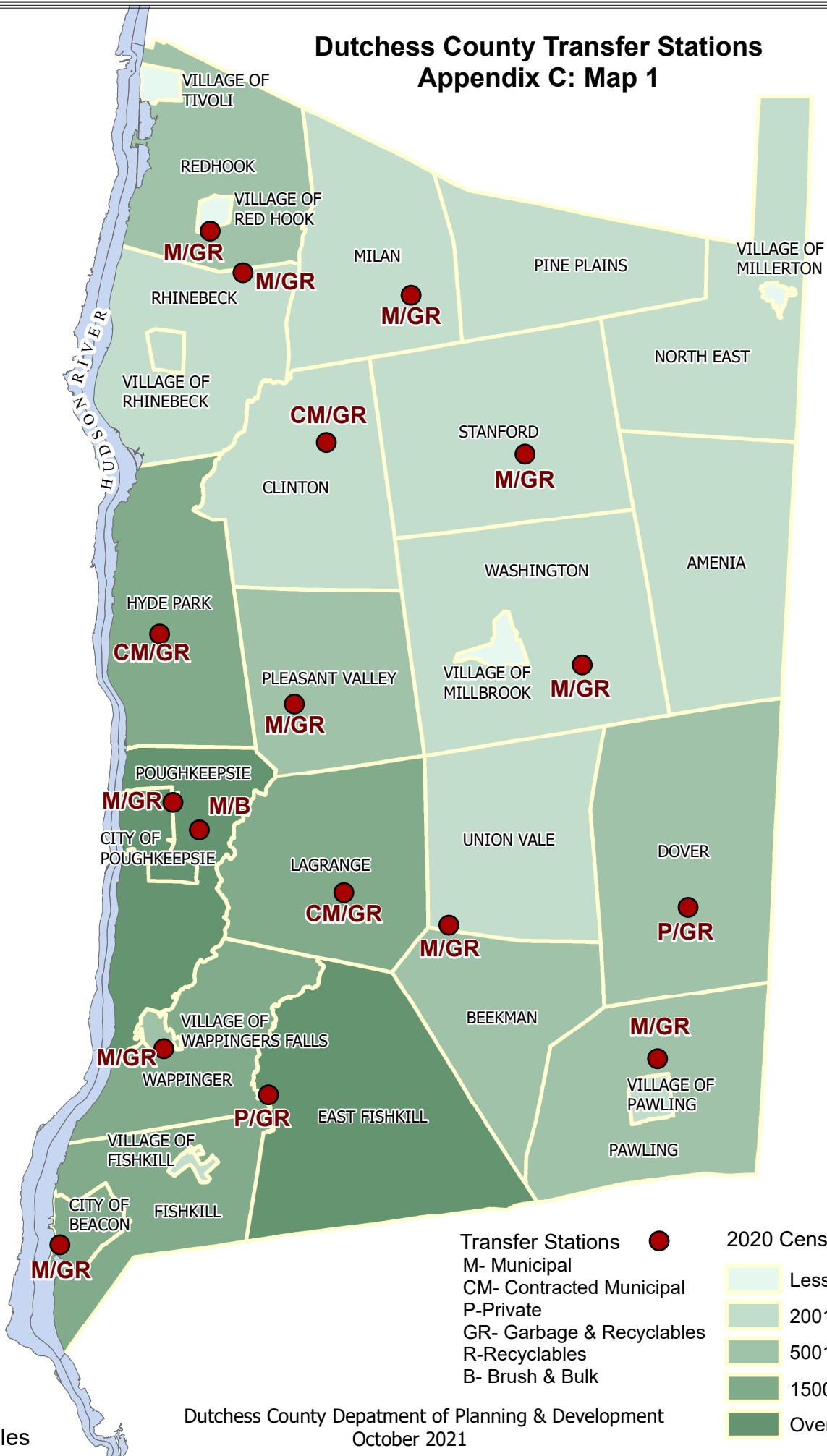


Appendix C

Appendix C: Table 1
Dutchess County Transfer Stations

Town/City	Owner/ Operator	Garbage	Plastic bottles	Aluminum Cans	Glass, Jars, Bottles	Newspaper	Corrugated Cardboard	Brush	Electronics	Tires	Vehicle Batteries	Hazardous Materials	Motor Oil	Appliances	Construction Debris	Comments
C/Beacon	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	
C/Poughkeepsie	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Accepts electronics from City residents only.
T/Clinton	Muni/Welsh	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	Accepts some electronics.
T/East Fishkill	Royal/Royal	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	Yes	
Harlem Valley (Dover)	Welsh/Welsh	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	Yes	
T/Hyde Park	Muni/Royal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	
T/LaGrange	Muni/Royal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	No	
T/Milan	Muni/Welsh	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	
T/Pawling*	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	
T/Pleasant Valley	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Refrigerators and freezers are accepted, but the doors must be removed
T/Poughkeepsie	Muni/Muni	No	No	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No	The Town of Poughkeepsie transfer station is only open 10 Saturdays per year to collect bulk items and some metal items
T/Red Hook*	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	
T/Rhinebeck	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	No	They accept fluorescent light bulbs
T/Stanford	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	No	
T/Union Vale**	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	No	They accept fluorescent light bulbs
T/Wappinger	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Only the Wappingers side of the Village of Wappingers Falls can use the transfer station
T/Washington*	Muni/Muni	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	They only accept appliances that do not contain freon
*Village also has use of the transfer station																
**Town of Beekman has use of the transfer station																

Dutchess County Transfer Stations Appendix C: Map 1



1 in = 5 miles

Dutchess County Department of Planning & Development
October 2021

Dutchess County Division of Solid Waste Management to host
**Three Household Hazardous Waste Disposal &
Electronics Recycling Events in 2021**

May 8th (registration opens April 8th), June 19th and October 2nd

To Be Held At: **626 Dutchess Turnpike, Poughkeepsie, NY**
(access off of Route 44 to Burnett Boulevard)
Registration and \$10 Prepayment Required

**Please wear a mask while signing in at event. Do not exit your vehicle,
event staff will unload your household chemicals and electronics.**

(Chemicals and fluorescents are unloaded first, electronics second. Please pack car accordingly)

Open to Dutchess County Residents Only

Register online: www.dutchessny.gov/solidwaste or call (845) 463-6020

Registration is limited to the first 380 households

These events are partially funded by the NY State Department of Environmental Conservation

Acceptable Items:

Product Containers Marked:

“Warning”, “Hazardous”, “Flammable”, “Poisonous”, “Corrosive”

Oil & lead based paints (**no latex!**), photo chemicals, non-latex driveway sealer, pool chemicals, creosote, kerosene, flammable liquids, metal polish, turpentine, stains, varnishes, strippers, thinners, gasoline/oil mixture, brake fluid, antifreeze, pesticides, herbicides, fungicides, chemical fertilizers, adhesives, resins, solvents, fluorescent tubes (tape together or put in box to prevent breakage), propane tanks, mercury containing devices, computer monitors, CPU's, fax machines, printers, TV's, stereos, telephones, lithium & sealed lead acid batteries (**no automotive!**).

Do Not Bring:

Waste in containers larger than 10 gallons, ammunition or explosives, asbestos products, latex driveway sealer & latex paint, building or construction debris, tires, furniture, medical waste, pharmaceuticals, air conditioners, radioactive materials, scrap metal, metal drums or empty containers, motor oil, car batteries, alkaline or rechargeable batteries.

Latex Paint - Add kitty litter or sawdust to dry out remaining paint, and then place the can in your regular trash

AAA, AA, C, D, 9 Volt and lantern batteries are regular household trash

Rechargeable Nickel Cadmium Batteries and cell phones – Bring to a drop off location at a local retailer

Automotive Batteries and Motor Oil - Drop off at auto centers or local repair shop.

Medications – visit www.dutchessny.gov/solidwaste for drop off locations

Registration and pre-payment for this HHW event is mandatory. We must receive your \$10.00 registration fee no later than the Wednesday prior to Saturday's event. No monies will be accepted at the collection site.

For more information: 845-463-6020



www.dutchessny.gov/solidwaste

DUTCHESS COUNTY SOLID WASTE
MATERIALS MANAGEMENT AND LICENSING
RULES AND REGULATIONS

For the Management of Solid Waste Generated Within the County of Dutchess as authorized by
Section 12.03 of the Administrative Code of the County of Dutchess.

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A. Purpose. The purpose of these rules and regulations is to:

1. Effectuate the management on a county-wide basis of all Solid Waste generated within or coming in from outside the County of Dutchess in order to protect the public health and safety, to improve the environment by control of air, water and land pollution, to ensure that Solid Waste generated or to be disposed of within the County is Disposed of or Recycled in an environmentally safe and sound manner, to implement the County's state-approved Local Solid Waste Management Plan, *Rethinking Waste*, to carry out the expressed policy of the State of New York to displace competition with regulation or monopoly public service.;
2. Effectuate the mandatory Source Separation of Recyclable Materials to recover and reuse Recyclable Materials so as to conserve natural resources, reduce the impact of the cost of Solid Waste Disposal, ensure safe and efficient processing of Solid Waste, help maximally reduce the quantity of Solid Waste that must be Disposed of, and to comply with New York State General Municipal Law Section 120-aa, and;

Carry out the expressed policy of the Dutchess County Legislature to take steps to discourage or prevent the infiltration of the Solid Waste hauling industry by undesirable or possible criminal elements.

B. Definitions. As used in these rules and regulations, unless the context otherwise requires:

1. **"APPLICANT"** shall mean a Person submitting an application for a Solid Waste Disposal License pursuant to these rules and regulations.
2. **"COMPOSTING"** shall mean a controlled decomposition process which turns organic residuals, such as food scraps, biosolids and yard waste into a beneficial soil amendment.

3. **"CONSTRUCTION AND DEMOLITION DEBRIS (C&D)"** shall mean materials generated during the construction, renovation, and demolition of structures, buildings, roads, and bridges. C&D debris includes, but is not limited to, bulky, heavy materials, such as concrete, wood, metals, glass, and salvaged building components.
4. **"COUNTY OF DUTCHESS"** shall mean the entire County of Dutchess as constituted and existing under the Laws of the State of New York.
5. **"DEPUTY COMMISSIONER"** shall mean the Deputy Commissioner of the Dutchess County Department of Planning and Development, Division of Solid Waste Management.
6. **"DISPOSAL OF SOLID WASTE"** or **"DISPOSAL"** or **"DISPOSE"** shall mean collecting, transporting, storing, disposing, transferring, processing or delivering Solid Waste, including Recyclables, to a Solid Waste Management-Resource Recovery Facility.
7. **"ECONOMIC MARKET"** shall mean instances when the full avoided costs of proper collection, transportation and disposal of source separated materials are equal to or greater than the cost of collection, transportation and sale of said materials less the amount received from the sale of said material.
8. **"ELECTRONIC WASTE OR E-WASTE"** shall mean all electronic waste, such as surplus, obsolete, broken, or discarded electrical or electronic devices, including but not limited to televisions, computer monitors, computer peripherals, electronic office equipment, telephones, and electronic entertainment devices.
9. **"EMERGENCY"** shall mean a situation when certain Solid Waste Management-Resource Recovery Facility(ies) in the County are not in operation, are unable to operate at normal capacity, or are otherwise unable to function pursuant to normal operating procedures as may

be determined by the Deputy Commissioner, or when conditions exist which may endanger the health or safety of the public or pose a significant risk of harm to the environment.

10. **"GENERATOR"** shall mean any Person that produces Solid Waste, including Recyclable materials.

11. **"HAULER"** shall mean any Person, other than a Municipality, who Disposes of Solid Waste and is required to have a Solid Waste Disposal License issued by the Deputy Commissioner. Haulers include Persons who:

- a) Have Solid Waste collection routes;
- b) Provide body mounts, including roll-off containers, dumpsters, trailers, and any other container in conjunction with the Disposal of Solid Waste;
- c) Provide for the Disposal of Solid Waste, such as a Hauler whose business is to Dispose of Solid Waste from residential, commercial, construction or industrial sites;

12. **"HAULER/EXEMPT"** refers to Persons whose Disposal of Solid Waste is solely limited to the Disposal of one of the materials listed below and is exempt from the Solid Waste Disposal License requirement:

a) New York State Department of Environmental Conservation (DEC) regulated waste Solid Waste transporters covered under New York State Part 364 Waste Transporter Permits and as may be amended from time to time. Regulated waste includes:

- residential septage
- residential raw sewage or portable toilet waste
- non-residential raw sewage or sewage contaminated waste
- sewage sludge (biosolids)

- water treatment plant residuals
- grease trap waste
- waste oil, yellow grease or oil, or petroleum contaminated soil
- waste tires
- asbestos waste
- low level radioactive waste (LLRW)
- low level radioactive waste mixed with hazardous waste
hazardous industrial/commercial waste
- regulated medical waste or other biohazard waste
- other industrial/commercial waste (e.g., including but not limited to oil & gas well
drilling fluids, pharmaceutical waste, rendering waste, waste from household
hazardous waste collection events)

b) Haulers of Solid Waste which has been collected from a site(s) outside of the County of Dutchess and is intended for Disposal at a site(s) outside the County.

13. **“HOUSEHOLD HAZARDOUS WASTE”** shall mean leftover household products that contain corrosive, toxic, ignitable or reactive ingredients such as cleaners, oils or pesticides.

14. **“LICENSE”** shall mean the Dutchess County Solid Waste Disposal License.

15. **“LICENSEE”** shall mean a Hauler who holds a Dutchess County Solid Waste Disposal license.

16. **“MULTI-DOMICILE BUILDING”** shall mean a building or structure that is designed to house several different occupants in separate housing units. The most common example of multi-domicile housing is an apartment building. Duplexes, quadruplexes, and townhomes

are also multi-domicile housing. The entire building or structure may be owned by an individual, as is the case with condominiums, or by individuals who have purchased units.

17. **"MULTI-TENANT BUILDING"** shall mean a group of commercial establishments managed as a single entity; each occupied and operated by a tenant or renter of such premises.

18. **"MUNICIPALITY"** shall mean any county, city, town, village, school district, improvement district (or a county, city, town or village acting on behalf of an improvement district), public authority, public corporation, municipal corporation or political subdivision.

19. **"PERSON"** shall mean any natural person, individual, partnership, co-partnership, association, owner or manager of a business, commercial or industrial establishment, joint venture, corporation, trust, estate or any other legal entity recognized by the laws of the State of New York inclusive of a Municipality or any other Waste Generator.

20. **"PRINCIPAL"** shall mean, as to an Applicant which is a sole proprietorship, the proprietor; a corporation, every officer and director and every stockholder holding ten percent or more of the outstanding shares of the corporation; a partnership, all the partners; and if another type of business entity, the chief operating officer or chief executive officer, irrespective of organizational title, and all persons or entities having an ownership interest of ten percent or more in the Applicant; and with respect to all business entities, all other persons participating directly or indirectly in the control of such entity. Where a partner or stockholder holding ten percent or more of the outstanding shares of a corporation is itself a partnership, or a corporation, a "principal" shall also include the partners of such partnership, or the officers, directors, and stockholders holding ten percent or more of the outstanding shares of such corporation, as is appropriate. For the purposes of this chapter:

a. An individual shall be considered to hold stock in a corporation where such stock is owned directly or indirectly by or for:

I. such individual;

II. the spouse of such individual other than a spouse who is legally separated from such individual pursuant to a judicial decree or an agreement cognizable under the laws of the state in which such individual is domiciled;

III. the children, grandchildren and parents of such individual; and

IV. a corporation in which any of such individual in the aggregate owns fifty percent or more in value of the stock of such corporation;

b. A partnership shall be considered to hold stock in a corporation where such stock is owned, directly or indirectly, by or for a partner in such partnership; and

c. A corporation shall be considered to hold stock in a corporation that is an Applicant as defined in this section where such corporation holds fifty percent or more in value of the stock of a third corporation that holds stock in the Applicant corporation.

21. **"RECYCLERS"** shall mean those who deal with recyclable material both as collectors, separators and marketers. This definition shall include not-for-profit corporations and charitable corporations which collect recyclables for fund raising purposes.

22. **"RECYCLING"** or **"RECYCLED"** or **"RECYCLABLE"** shall mean any process by which materials, are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products.

23. **"RECYCLABLE MATERIAL"** shall mean material that can be recovered and turned into a new product. Recyclable materials include:

a. All paper;

b. All cardboard;

- c. All glass, excluding ceramics, window or automobile glass, mirrors and light bulbs;
- d. All plastic;
- e. All metals;
- f. All bulk metals, excluding metal containers utilized to store flammable or volatile chemical materials, such as fuel tanks;
- g. All recoverable Construction and Demolition debris, such as uncontaminated concrete, asphalt, asphalt shingles, gypsum wallboard, wood, and metals;
- h. Electronic waste or Ewaste;
- i. All garden and yard waste, such as grass clippings, leaves, and cuttings from shrubs, hedges, trees, brush and garden debris;
- j. All food waste;
- k. Textiles.

24. **"REGULATED RECYCLABLE MATERIALS"** shall mean materials designated by the Deputy Commissioner to be Source Separated by all Persons and include, but are not limited to:

- a. All paper and cardboard;
- b. All glass, excluding ceramics, window or automobile glass, mirrors and light bulbs;
- c. All plastic, excluding plastic bags, plastic film and Styrofoam®;
- d. All metals, excluding scrap metal; and
- e. Any other materials as may be designated by the Deputy Commissioner.

25. **"RRA"** shall mean the Dutchess County Resource Recovery Agency created under Chapter 675 of the Laws of 1982 of the State of New York, as amended.

26. **"SOLID WASTE"** shall mean any discarded materials. Solid wastes can be solid, liquid, semi-solid or containerized gaseous material. This includes durable goods, non-durable goods, recyclable materials, containers and packaging, food wastes and yard trimmings, and miscellaneous inorganic wastes generated.
27. **"SOLID WASTE MANAGEMENT-RESOURCE RECOVERY FACILITY"** shall mean any facility, plant, works, systems, building, structure, improvement, machinery, equipment, fixture or other real or personal property which is used, occupied or employed for the collecting, receiving, transporting, transfer, storage, processing or Disposal of Solid Waste or the recovery by any means of any material or energy product or resource therefrom including, but not limited to, Recycling Centers, transfer stations, baling facilities, rail haul or maritime facilities, collection vehicles, processing systems, resource recovery facilities, steam and electric generating and transmission facilities, including auxiliary facilities to supplement or temporarily replace such generating facilities, steam distribution facilities, sanitary landfills, plants and facilities for compacting, composting or pyrolyzation of solid wastes, incinerators and other solid waste disposal, reduction or conversion facilities and resource recovery equipment and disposal equipment as defined in subdivisions four and five of Section 51-0903 of the Environmental Conservation Law of the State of New York.
28. **"SOURCE SEPARATION"** means the segregation of Recyclable Materials from Solid Waste at the point of generation by the Generator for the purposes of Recycling.
29. **"STATE"** shall mean the State of New York.
30. **"UNCONTAMINATED"** shall mean free of materials that are not Recyclable or free of materials that, if present, either reduce the value of a Recyclable material or render it unrecyclable.
31. **"YARD WASTE"** shall mean grass clippings, leaves, and cuttings from shrubs, hedges, trees, brush and garden debris.

32. **"VEHICLE"** means any motor vehicle, trailer, water vessel, railroad car, airplane or other device for transporting Solid Waste.

33. **"WASTE GENERATOR"** means any Person who generates Solid Waste.

C. General Powers – Deputy Commissioner

1. The Deputy Commissioner shall recommend for adoption by the County Legislature rules and regulations for the handling, hauling and disposal of Solid Waste within the County of Dutchess and affixing penalties for the violation thereof. The Deputy Commissioner is authorized to amend these rules and regulations consistent with the policy established through these Rules and Regulations but is not authorized to decrease or increase any fines or penalties or the amounts thereof for any violations of these rules and regulations without specific authorization and approval from the County Legislature. The Deputy Commissioner shall consult with the Dutchess County Resource Recovery Agency in the development of these rules and regulations to ensure compatibility.

2. Whenever the Deputy Commissioner is empowered to or charged with the responsibility to do or perform an act, a designee may perform such act in the Deputy Commissioner's place.

3. The Deputy Commissioner is authorized to:

- a. Require that all Haulers of Solid Waste be licensed per the requirements of these regulations.
- b. Issue subpoenas.
- c. Administer oaths to witnesses.
- d. Prescribe and impose penalties for violation of these rules and regulations.
- e. Authorize necessary action to alleviate emergencies and/or public nuisances in the event that a Person, Hauler, or Municipality fails to respond to such situations.

- f. Change issued license conditions, such as designated facilities, quantities to be Disposed, and vehicular specifications in situations of emergency or other situations as may be warranted to fulfill the Deputy Commissioner's obligations.
- g. Randomly inspect and monitor vehicles and inspect the Licensee's premises and equipment for the purpose of ascertaining compliance with these rules and regulations.
- h. In addition to the administrative enforcement proceedings referred to herein, maintain and defend actions in law or equity in any court of competent jurisdiction.

D. Use of Disposal Facilities.

No Person, Hauler or Municipality shall Dispose of Hazardous Waste, as defined in New York State Department of Environmental Conservation regulations, at any Solid Waste Management Resource Recovery Facility in the County.

E. Source Separation Provisions.

1. All Haulers operating in the County of Dutchess must provide collection services for both Solid Waste and Regulated Recycling for all Persons.
2. Every Waste Generator in Dutchess County shall be responsible for the Source Separation of Solid Waste and Regulated Recyclables Materials at the point of generation. Waste Generators shall Source Separate additional materials designated as Recyclables by a local municipality pursuant to § 120-aa of the General Municipal Law, if that municipality provides or causes to be provided collection of such materials for the Waste Generator or a location within that municipality for delivery of such materials by the Waste Generator.
3. Each Waste Generator shall provide for the removal of those separated Regulated Recyclables which the Waste Generator is required to Source Separate pursuant to subsection "2" above from the property on which they are generated either through service provided by a Municipality or by a Licensed Hauler, or by taking these materials directly to a Recyclables

transfer, storage or processing location. Recyclables shall not be disposed of at the facility operated by the RRA.

4. Each Waste Generator shall be required to prepare those Regulated Recyclables which the Waste Generator is required to Source Separate pursuant to subsection "2". above, according to any ordinance, regulation or rule of the Municipality that provides Recyclables collection services to that Waste Generator, or if such collection services are provided by a Hauler, then according to the directions of the Hauler. If a Waste Generator utilizes direct haul, Recyclables shall be prepared in the manner prescribed by the recyclables transfer, storage or processing facility to which the Waste Generator delivers such materials.

5. In the case of Multi-Tenant buildings or Multi-Domicile buildings and complexes, the owner or manager of such building is responsible to provide the following: appropriate container(s) either directly or indirectly through their hauler to hold Source Separated Regulated Recyclable Materials for the entire building(s) separate from the container(s) where the building's non-Regulated Recyclable Solid Waste is stored and a mechanism for Disposal of Source Separated Regulated Recyclable Materials. In cases where a condominium association exists, the condominium association shall be responsible for provision and maintenance of the Recycling container(s). It shall be the tenant's responsibility to separate designated Regulated Recyclable Materials from the Solid Waste and deposit the Regulated Recyclable Materials in the container(s) provided.

6. Nothing in this chapter shall be construed to prohibit private composting of garden, yard, and food scrap waste by a Waste Generator on the Waste Generator's own property.

F. Solid Waste Disposal Licensing of Haulers.

1. It is unlawful for any Hauler to Dispose of any Solid Waste unless such Hauler is licensed in accordance with the provisions of these regulations.

2. All Haulers of Solid Waste who seek to Dispose of Solid Waste within the County of Dutchess shall apply to the Deputy Commissioner for a License. Applications shall be submitted on forms prescribed by the Deputy Commissioner. Applicants must be able to comply with these Rules and Regulations. An application and all accompanying documentation shall be deemed to be submitted under oath, subject to penalties of perjury.
3. The Deputy Commissioner shall charge a licensing fee as provided for in the adopted annual budget of the County of Dutchess.
4. The term of the license will be two years, from February 1 to January 31 biennially.
5. The fee for a License is based on the number of power units used to Dispose of Solid Waste. For the purposes of these regulations, a power unit is defined as the control and pulling vehicle.
6. If during the term of the license the number of power units change, causing an increase in the licensing fee, the Hauler is required to pay the pro-rated difference based on the monetary change and the number of months remaining on the biennial license. Fees will not be refunded for a decrease in the number of power units.
7. Vehicle Permit Stickers:
 - a) Will be issued with the License, based on the number of power units of the Hauler;
 - b) Vehicle permit stickers for licensed Haulers are valid for one year;
 - c) All power units must have a current and valid vehicle permit sticker affixed to the left side of the power unit.
8. On vehicles where the engine and body mount are not on the same chassis, the body mount must have a business name and contact number. Body mounts include roll-off containers, dumpsters, trailers and any other container used to Dispose of Solid Waste. Both the power unit and the body mount must have a business name and contact number of the Licensee.
9. Annual MSW Report:

a) An Annual MSW Report Form is required by January 31st every year and will reflect collection data from January 1 to December 31 of the previous year. The annual report will allow the County of Dutchess to properly gauge the volume and nature of its solid waste stream, including where waste is Disposed of and the volume of Recyclables recovered. The report will allow the County of Dutchess to evaluate the effectiveness of its Solid Waste Management Plan and comply with annual reporting requirements of the New York State Department of Environmental Conservation;

b) Any Hauler who fails to provide a completed Annual MSW Report Form by January 31st of each year will be subject to a civil penalty of up to \$500.00 and the loss of the License.

10. No Applicant or Licensee which has been denied a license or has had its license revoked may reapply within six months of the denial or revocation.

11. All materials submitted on an application, the disclosure of which would in Applicant's opinion constitute an unwarranted invasion of personal privacy or result in substantial injury to the competitive position of the Applicant shall be marked "Proposal Confidential" prior to submission to the Deputy Commissioner. If a Freedom of Information request for such materials is received by the Deputy Commissioner, the Applicant/Licensee will be notified of the request. If such materials are proposed to be released by the Deputy Commissioner, the Applicant/Licensee will be mailed notice five days before such release. The Deputy Commissioner makes no representation that materials submitted as "Proposal Confidential" will not be disclosed pursuant to the Freedom of Information Law. Applicants and Licensees are further advised that the Deputy Commissioner will, without notice to them, comply with all subpoenas and process, and will forward all information received or gathered to the appropriate authorities.

12. All of the Applicant's drivers must be properly licensed and all vehicles must be registered with the appropriate Motor Vehicles Department and properly insured.

13. All applicants must be able to comply with the Insurance requirements as outlined in the License application.

14. Each Applicant shall provide the Deputy Commissioner with a business address with the understanding that this address shall be used by the Deputy Commissioner for the purpose of serving process and notices upon the Applicant. It shall be the responsibility of the Applicant to advise the Deputy Commissioner in writing of any change in address and the Deputy Commissioner shall not be responsible for the improper service of process and notices due to Applicant's failure to mention an updated address where notices may be delivered and legal process served.

15. By applying, the Applicant and each of its Principals authorizes the Deputy Commissioner to independently investigate their character and fitness, which authorization includes the authority to obtain copies of all relevant records, whether otherwise privileged or not, and to obtain copies of all criminal history, legal and administrative records. An Applicant and each of its Principals shall execute and deliver to the Deputy Commissioner all necessary consents and waivers needed to conduct such investigations and obtain such records. The independent investigation will be conducted by a private investigative firm under contract with the County of Dutchess. The Applicant shall submit a check for the cost of the private investigation with its application.

16. Where, as a result of the investigation of an Applicant, it appears that an employee of the Applicant may not qualify for a License, or that further investigation is warranted, the Deputy Commissioner may conduct an additional investigation of such employee and may require, if necessary, that the Applicant and such employee provide information updating, supplementing or explaining information previously submitted;

17. A supplemental investigation may be required in the event the independent investigative report indicates issues or concerns that need to be investigated further. If a supplemental investigation is deemed necessary by the Deputy Commissioner, the Applicant is responsible for paying the cost of such investigation prior to the commencement of the supplemental private investigation.

18. The Applicant and all Principals shall be fingerprinted as per instructions found in the License application.

19. In the case of an Applicant which is managed, operated or otherwise affiliated with another entity, fingerprinting and disclosure under this section may also be required of any persons who have direct management supervisory responsibility for the operations or performance of the Applicant.

20. The Applicant is responsible for all costs associated with the application fee, background investigation fee, supplemental investigation fee, and fingerprinting fee.

21. Applications are not deemed complete until all fees and expenses have been paid and all necessary materials submitted.

22. The license and the privileges granted are exclusively personal in nature and are not transferable without the consent of the Deputy Commissioner. The Licensee may not assign, convey, sell, transfer (including but not limited to an attempt to the transfer of the license pursuant to a sale or transfer of all or a part of the Licensee's assets) or otherwise dispose of the license without such consent. Any attempted transfer of the license or any rights granted without the express written consent of the Deputy Commissioner is void. Any such assignment shall not relieve the Licensee of its obligations hereunder.

G. Refusal to Issue a Solid Waste Disposal License.

The Deputy Commissioner may, after notice and the opportunity to be heard, refuse to issue a License to an Applicant who fails to meet the criteria for licensing under these rules. Such notice shall specify the reasons for such refusal. The license application fee will be forfeited, and no refund given for fingerprinting and private investigation fees expended. In making such determination, the Deputy Commissioner may consider, but is not limited to:

1. Failure to provide all the information and/or documentation required by the Deputy Commissioner pursuant to these rules or who has otherwise failed to demonstrate eligibility for such license under these rules and regulations within sixty days of initial application;
2. Failure by such Applicant and/or its Principals to provide complete or truthful information and/or answers to questions asked in connection with the application;
3. A pending indictment or criminal action against such Applicant or any of its Principals for a crime which under this subdivision would provide a basis for the refusal of such license, or a pending civil or administrative action to which such Applicant or any of its Principals is a party and which directly relates to the Applicant's ability to conduct the business or perform the work for which the license is sought, in which cases the Deputy Commissioner may defer consideration of an application until any pending matter has been concluded, and/or a decision has been reached by the court or administrative tribunal before which such action is pending;
4. Conviction of such Applicant or any of its Principals for a crime which, considering the factors set forth in section seven hundred fifty-three of the NYS Correction Law, would provide a basis under such law for the refusal of such license;

5. A finding of liability in a civil or administrative action that bears a direct relationship to the Applicant or any of its Principals' ability to perform or to conduct the business for which the license is sought;
6. Conviction of a racketeering activity, including but not limited to the offenses listed in subdivision one of section nineteen hundred sixty-one of the Racketeer Influenced and Corrupt Organizations statute (18 U.S.C. Section 1961 et seq) or of an offense listed in subdivision one of section 460.10 of the NYS Penal Law, as such statutes may be amended from time to time, or the equivalent offense under the laws of any other jurisdiction;
7. Having been a Principal within the previous ten (10) years from date of application in a predecessor waste business, where the Deputy Commissioner would be authorized to deny a license to such predecessor business pursuant to this subdivision;
8. Failure to pay any tax, fine, penalty, or fee related to the Applicant's business for which liability has been admitted by the person liable therefore, or for which judgment or a lien has been entered by a court or administrative agency or tribunal of competent jurisdiction.
9. Applicant was previously issued a Dutchess County Solid Waste Disposal License pursuant to these rules and regulations and such license was revoked within ten (10) years of date of application;
10. Applicant was denied or had a license revoked within the previous ten (10) years from the date of application in another jurisdiction;
11. Applicant employs any person, or engages as an agent, any person whom the Deputy Commissioner has determined is unqualified to hold a license following a background investigation conducted pursuant to these rules and regulations.

12. Applicant has been determined to have committed any of the acts which would be a basis for the suspension or revocation of a license pursuant to these rules.

H. Licensee Changes.

1. A Licensee shall inform the Deputy Commissioner **within five (5) business days** of all changes as listed below:

- a) The addition or deletion of a vehicle;
- b) Insurance carrier or coverage changes.

2. A Licensee shall inform the Deputy Commissioner **within twenty (20) business days** of all changes as listed below:

- a) Changes in ownership of the Licensee;
- b) The addition or deletion of any Principal;
- c) Change in corporate status;
- d) All arrests and or criminal convictions of Licensee and any Principal of the Licensee;
- e) All liens, suits and administrative proceedings relating to the operation of the Licensee's business; or
- f) Any other material change in the information submitted on the application for a license.

3. If notification of change, as outlined above, is not received within the time frame stated the License may be subject to suspension.

4. Changes in ownership of a Licensee requires a new application, background investigation and fingerprinting of the new Principal(s). The addition of a new Principal(s) requires the completion of Section H, Disclosure Information for Principals & Applicants of the License application, a background investigation and fingerprinting of the new Principal(s).

5. If after review, and after notice and the opportunity to be heard, the Deputy Commissioner determines that such new Principal fails to meet the criteria for licensing under these rules the License may be suspended or revoked unless such new Principal divests his or her interest, or discontinues his or her involvement in the business of such Licensee, as the case may be.

I. Solid Waste Disposal License Renewals.

1. The license term is from February 1st to January 31th biennially.
2. Licensed Haulers are required to submit the following for license renewal by January 1st prior to the expiration of the License term;
 - a) Solid Waste Disposal Relicensing Affidavit;
 - b) Details of any changes, per Section "H" above, if applicable;
 - c) Licensing fee as provided for in the adopted annual budget of the County of Dutchess;
 - d) Vehicle Information Form. The number of vehicle permit stickers issued and the fee is dependent on the number of power unit vehicles listed;
 - e) Renewal Checklist.
3. A License or the required vehicle permit stickers will not be issued until payment and all required documents have been received and approved by the Deputy Commissioner.
4. If the affidavit indicates any changes as listed in Section H above, a background investigation and fingerprinting may be required.
5. Licensed Haulers are required to fill out a full application and have a private investigation conducted, at the Licensee's expense, every third renewal.

J. Revocation, Suspension or Denial of Renewal of a Solid Waste Disposal License:

The Deputy Commissioner may, after notice and the opportunity to be heard, suspend, revoke or deny renewal of a license and notify the Solid Waste Management-Resource Recovery Facilities located in Dutchess County of such suspension, revocation or denial if a Hauler:

1. Does not comply with these Rules and Regulations;
2. Is found to have submitted a false or materially incomplete application;
3. If facts are disclosed, whether they existed before or after the License was issued, which would have warranted a refusal to issue a license;
4. Has an outstanding balance of \$2,500 or more for tipping fee charges due to the Dutchess County Resource Recovery Agency for a period exceeding six (6) months. The suspension will be lifted upon notification that the outstanding balance has been paid in full. Failure to pay the outstanding balance within three (3) months of the suspension will lead to a revocation of the License; or
5. Failure to pay any tax, fine, penalty, or fee related to the Applicant's business for a period exceeding six (6) months, for which liability has been admitted by the person liable, or for which judgment or a lien has been entered by a court or administrative agency or tribunal of competent jurisdiction. The suspension will be lifted upon notification that the tax, fine, penalty, or fee has been paid in full. Failure to pay the tax, fine, penalty, or fee within three (3) months of the suspension will lead to a revocation of the License.
6. Failure to pay any civil penalty due to the County of Dutchess prior to the January 1st deadline for License renewal.

K. Vehicle and Container Requirements.

1. Collection and transport vehicles shall conform to New York State Vehicle and Traffic Law as described for a motor vehicle and to New York State Department of Environmental Conservation waste transporter specifications.
2. All Recyclables collection containers, bins, and dumpsters shall be clearly labeled as to the type of material the container, bin, or dumpster accepts.
3. All collection containers, bins, or dumpsters shall be easily accessible to residents, employees and Haulers.

L. Enforcement

Formal Hearings

1. The Deputy Commissioner may hold a formal hearing on any application, complaint, circumstances, or alleged violation of these rules and regulations.
2. A formal hearing shall be on due and adequate notice to the person, persons or entity concerned and shall be set down for a day certain, unless a person charged with a violation of these rules and regulations admits liability by returning the Notice of Violation with payment of the proposed penalty and by signing the admission of liability on said notice.
3. All hearings conducted shall follow the prescriptions of Article 3 of the New York State Administration Procedure Act and the local rules set forth below.
4. The Notice of Hearing shall set forth:
 - (a) The time and place of the hearing
 - (b) The purpose of the hearing
 - (c) The charges and violations complained of, with specific reference to provisions and sections these rules and regulations.
 - (d) The right to present evidence
 - (e) The right to examine and cross-examine witnesses
 - (f) The right to be represented by counsel
5. All adjudicatory hearings held hereunder shall be closed and conducted in private unless the respondent elects for the hearing to be open and conducted in public.
6. On the return day of the hearing:
 - (a) The hearing officer shall note the appearance of the persons attending the hearing.
 - (b) Witnesses shall be sworn and testimony shall be recorded.
7. The hearing officer shall thereafter prepare findings of fact, conclusions of law, and recommendations upon which the Deputy Commissioner shall make a formal order setting forth the determination, conditions, if any, to be complied with and civil penalties, if any.

8. The Order of the Deputy Commissioner, following a formal hearing, shall be filed in the office of the Division of Solid Waste Management and served on the Respondent.

9. Nothing herein contained shall preclude the Deputy Commissioner from taking any action in addition to the formal hearing herein provided for, as may be prescribed by law, nor shall the Deputy Commissioner be precluded from taking such other action by virtue of the order made pursuant to this Section.

10. Prior to adjudication, the Deputy Commissioner may settle any charges of a violation of these rules and regulations on such terms and conditions acceptable to the Deputy Commissioner.

Service of Order and/or Notice of Hearing

Unless otherwise expressly provided by law, service of an order and/or notice of hearing shall be made as follows:

1. Enclosing the order and/or notice in a post-paid envelope directed to the person or persons concerned at the address last known to the Division of Solid Waste Management and depositing such envelope at a United States Post Office or in a mail box or mail chute maintained by the United States Post Office; or
2. Leaving the order and/or notice with the person concerned; or, if the person is not an individual, with a member of the partnership or other group concerned or with an officer of the corporation or person in charge of the office or premises; or
3. Posting the order and/or notice at the entrance door of the office of the respondent.

Hearing appearances

1. At any hearing conducted pursuant to these rules and regulations, any party to the proceedings may appear personally and with counsel and shall be given the opportunity to produce evidence and witnesses and to cross-examine witnesses.
2. At any formal hearing conducted pursuant to these rules and regulations, if a party shall appear without counsel, the hearing officer shall advise such party of his right to counsel; and that, if he desires to proceed without counsel, he may call witnesses, cross-examine witnesses and produce evidence in his behalf.
3. Appearances shall be noted on the official record of Hearings.

Hearing adjournments

1. The hearing officer may grant adjournments upon request of any party to the proceedings, provided that an adjournment shall not be for an indefinite period of time but shall be set down for a day certain.
2. If an adjournment is requested in advance of the hearing date, such request shall be submitted to the hearing officer in writing and shall specify the reason for such request.
3. In considering an application for adjournment, the hearing officer shall consider whether the purpose of the hearing will be affected or defeated by the granting of such adjournment.

Subpoenas

The Deputy Commissioner or the designated hearing officer may issue subpoenas upon request of any party to the proceedings of any formal hearing set down by the Deputy Commissioner.

Hearing Procedures

1. The hearing officer shall not be bound by the rules of evidence in the conduct of a hearing but the determination shall be founded upon sufficient factual evidence to sustain it.
2. Proof may be adduced with respect to ongoing violations occurring up to and through the date of the hearing, when these violations are sufficiently similar to those charged to put the Licensee on notice of the nature of the violation.
3. Upon the conclusion of a hearing, the Deputy Commissioner shall take such action upon such findings, determinations and recommendations as he/she deems proper and shall execute an order carrying such findings and determinations into effect.
4. The action of the Deputy Commissioner may include the assessment of civil penalties
5. An order of suspension or revocation of a Solid Waste Disposal License may contain such provisions as to renewal or reinstatement as the Deputy Commissioner may direct.
6. The Deputy Commissioner may direct a re-hearing or require the taking of additional evidence and may rescind or affirm a prior determination after such re-hearing.
7. The record of a formal hearing including the testimony of witnesses shall be made available to all parties for examination at the office of the Division of Solid Waste Management.
8. Copies of the record of a formal hearing including a transcript of the testimony of witness(es) may be purchased at the rate per page covering the cost thereof.

Administrative penalties for violation

1. Any Person who violates any provision of these rules and regulations pertaining to the licensing of Haulers shall be subject to the imposition of a civil penalty by the Deputy Commissioner as follows:

- (a) For the first violation, up to 500.00.
- (b) For the second violation, up to \$1000.00.
- (c) For a third and succeeding violations, up to \$2000.00.

2. Any person who violates any provision of these rules and regulations pertaining to Source Separation of Recyclables shall be subject to the imposition of a civil penalty by the Deputy Commissioner as follows:

- (a) For the first violation, up to \$250.00.
- (b) For the second violation, up to \$500.00.
- (c) For the third violation and succeeding violations, up to \$1,000.00.

3. The civil penalty provided for in this Section may be sued for and recovered by the Deputy Commissioner in the proper court of jurisdiction in addition to any other expenses incurred by the County.

4. Each day or a part of a day on which a violation or failure continues shall constitute a separate violation.

Enforcement other than by prosecution

1. The Deputy Commissioner of his/her designee may seek to obtain voluntary compliance with these rules and regulations by way of notice, warning or educational means in the first instance.

2. This Section shall not be construed to require that such non-compulsory methods must be employed or attempted before proceeding by way of compulsory or other legally prescribed procedures.

M. Intermunicipal Agreements.

The Deputy Commissioner may enter into intermunicipal agreements with those municipalities having control over Solid Waste collection, that is, those offering municipal collection or private collection through municipal contracts. Intermunicipal agreements will obligate involved municipalities to deliver any amount of waste allocated by the Deputy Commissioner to designated facilities.

N. Survival.

If any portion of these rules and regulations are held by a court of competent jurisdiction to be unconstitutional or invalid to the extent that they are not held unconstitutional or invalid, they shall continue in full force and effect.

Dutchess County Division of Solid Waste Management

These rules and regulations become effective August 5, 2014

Appendix D

Appendix D: Table 1												
Dutchess County Solid Waste Management Plan Implementation Schedule												
#	TASK	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Local Solid Waste Management Plan and Reporting											
1.	Biennial LSWMP Update											
2.	Draft LSWMP 10-year plan											
3.	Adopted 10- plan											
4.	Biennial summary update to County											
	Laws and Legislation											
5.	Enforcement of Local Law No. 3											
a.	Ensure compliance with requirement that haulers be licensed											
b.	On-site and visual inspection of compliance with hauler licensing*											
c.	Review current law and make amendments as needed											
d.	Respond to reports of non-compliance with mandatory source separation of recyclable material law*											
e.	On-site inspection of compliance with law*											
f.	Fine enforcement*											
6.	Promote NYS laws and legislation concerning solid waste management											
a.	Help to promote and enforce NYS Food Donation and Food Scrap Recycling Act											
b.	Help to promote the PaintCare paint stewardship program											
c.	Keep up-to-date on NYS legislation concerning product stewardship and solid waste initiatives											
	Data Management											
7.	Process and monitor hauler licensing											
8.	Annual collection of MSW data											
a.	Continue to look for ways to enhance data collection											
b.	Continue to track if additional recycling bins given to entities increases recycling											
9.	Solid Waste Management website											
a.	Listing of licensed haulers											
b.	License application and renewal forms on website											
c.	Annual County-wide MSW report on website											
d.	Latest product stewardship legislation and promotion											
e.	Up-to-date information on recycling, reuse and reduction											
f.	Household Hazardous Waste and Electronics collection events promotion											
	Waste-to-Energy Facility											
10.	Continue to look for an alternative method of ash disposal											
11.	Update the tipping fee rates to continue to remain without a Net Service Fee											
12.	Continue to accept pharmaceutical wastes, including from surrounding counties for proper destruction											
13.	Assess waste disposal technology and options											
a.	Assess the lifespan of the current facility											
b.	Review current technology for options of waste disposal											
c.	Plan for future disposal of waste within the County											
a.	Reduce and Reuse											
14.	Support PAYT concept and help initiate a program if there a municipal interest											
15.	Extended Producer Responsibility (EPR) product/packageging initiatives											
a.	Work with the state on EPR compliance (e-waste, plastic bags, etc.)*											
b.	Identify and promote local EPR opportunities**											
16.	Keep the website up-to-date concerning reduce and reuse opportunities**											
a.	Promote reuse centers within the County**											

Appendix D: Table 1												
Dutchess County Solid Waste Management Plan Implementation Schedule												
#	TASK	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Recycling Education												
17.	Public presentations & attend green events to promote recycling											
a.	Participate in recycling events**											
b.	Continue public presentations to schools, libraries, businesses and public sector**											
c.	Continue America Recycles Day activities and promotions**											
d.	Continue Annual School Recycling Challenge**											
18.	Website promotion of recycling											
a.	Identify and promote the list of what can be recycled in the County**											
b.	Create additional videos for recycling education**											
c.	Continue monthly newsletter concerning recycling and reuse topic**											
19.	Create infrastructure for more public space recycling											
a.	Continue bin loan program for public events											
b.	Identify tourism impacts and need for additional recycling infrastructure**											
Organics Management												
20.	Work with a consulting firm to asses the feasibility of a composting facility											
a.	Apply to grant sources to help with consulting firm and study fees											
b.	Identify and quantify major generators of organics, including biosolids											
c.	Identify a possible site for an organics composting facility											
d.	Identify the type of compost facility that would be feasible											
e.	Identify funding sources for a facility if applicable											
21.	Promote mulching leaves and grass clippings at the source											
22.	Identify opportunities for food diversion to local pantries/kitchens											
23.	Continue to promote backyard composting and the sale of at-cost compost bins											
Special Wastes												
24.	Continue HHW and Electronics collection events for County residents											
25.	Continue to hold an annual CESQG event for small businesses, schools and farms											
26.	Evaluate the need for additional animal mortality composting											
Partnerships												
27.	Maintain active participation in Hudson Valley Regional Council Solid Waste Committee meetings											
28.	Maintain active participation in the Climate Smart program											
29.	Communicate with municipalities to assist them with solid waste management and transfer station operations											
a.	Inform about local and state recycling laws*											
b.	Keep up-to-date with what is accepted, and what is not, at transfer stations**											
c.	Promote grant opportunities for drop off center upgrades & reuse centers**											
d.	Provide technical assistance with yard waste management											
e.	Work with municipalities developing zoning and building code language that requires construction & demolition debris recycling											
30.	Work with the private C&D recyclers in the county to promote reduction & reuse**											
Education Sector												
31.	Elementary and secondary schools:											
a.	Verify all public and private schools are in compliance with local law*											
b.	Assist with drafting recycling contracts as needed to incentivize recycling**											
c.	Develop elementary and secondary school recycling for fundraising**											
d.	Develop protocols for end of year "cleanouts" to divert more materials for recycling**											
e.	Provide signage, brochures, flyer to individual schools for recycling promotion**											
32.	Colleges:											
a.	Promote college, county and community relationships regarding solid waste sustainability programs											

Appendix D: Table 1												
Dutchess County Solid Waste Management Plan Implementation Schedule												
#	TASK	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Commercial/Institutional Sector											
33.	Conduct compliance inspections of malls, shopping centers, government and business centers*											
34.	Identify barriers to recycling compliance and strategies to overcome them											
	Agricultural Sector											
35.	Work with DC Cornell Cooperative Extension											
a.	Composting education and promotion											
b.	County-wide recycling campaigns											
c.	Working with local farms on recycling and composting initiatives											
	Industrial Sector											
36.	Identify major industrial generators in the county											
37.	Explore areas of expanding reuse/recycling and composting initiatives											
Legend:												
Ongoing task: Have been implemented and will be ongoing throughout the ten-year plan.												
Future task: Indicated by green highlight												
The Implementation Schedule timeline and tasks are dependent on staffing and funding.												
The numbering of tasks is for reference use only, and do not indicate priority.												
The asterisks indicate that the task could be, or should be, done by the Compliance Officer or Recycling Educator. No asterisk, the task is done or can be done, by everyone on staff.												
* = Compliance Officer task												
** = Recycling Educator task												